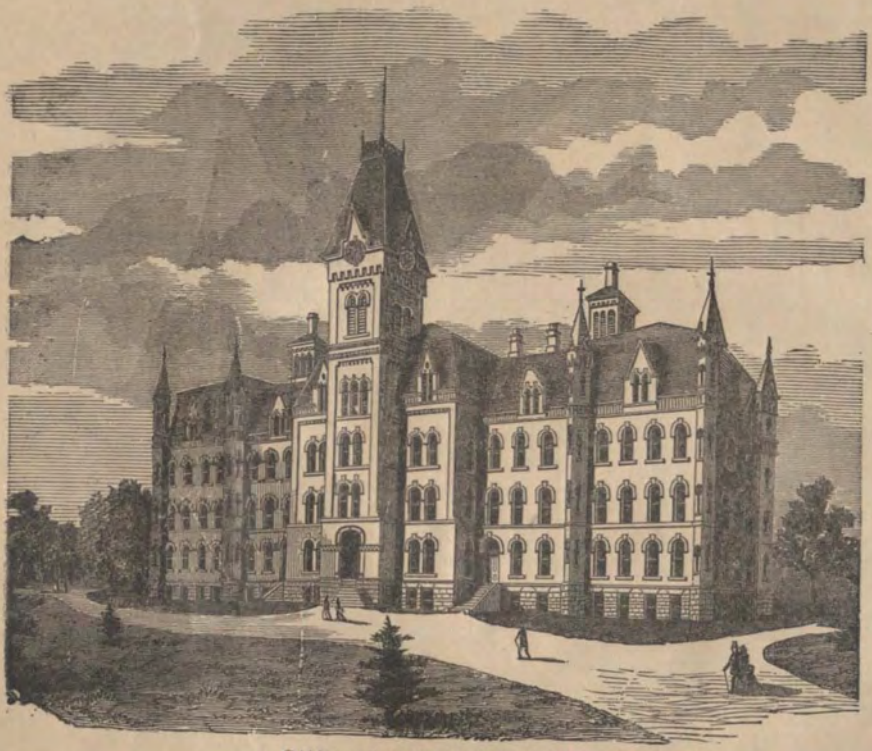

OHIO STATE UNIVERSITY

EIGHTH ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

OHIO STATE UNIVERSITY,

TO THE

GOVERNOR OF THE STATE OF OHIO,

FOR THE YEAR 1878.

COLUMBUS:
NEVINS & MYERS, STATE PRINTERS.
1878.

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COLUMBUS, OHIO, *November* 29, 1873.

To His Excellency Governor, RICHARD M. BISHOP:

SIR: I have the honor to transmit herewith the Eighth Annual Report of the Board of Trustees of the Ohio State University, with a transcript of their proceedings, "and such other matters as may be supposed useful."

Very respectfully, your obd't serv't,

ALBERT ALLEN, *Secretary.*

REPORT OF BOARD OF TRUSTEES.

An act of the Sixty-third General Assembly of Ohio, passed May 1st, 1878, contains, in part, the following:

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That the educational institution heretofore designated as the Ohio Agricultural and Mechanical College shall be known and designated hereafter as "The Ohio State University."

SECTION 2. The government of said university shall be vested in a board of seven trustees, who shall be appointed by the governor of the state, with the advice and consent of the senate; but no trustee, or his relation by blood or marriage, shall be eligible to any professorship or position in the university, the compensation for which is payable out of the state treasury, or said college fund.

SECTION 3. The members of said board of trustees, and their successors, shall hold their offices for the term of seven years each: provided, that the trustees first appointed under the provisions of this act shall hold their terms for one, two, three, four, five, six, and seven years, respectively, to be fixed by the governor in their commissions. In case a vacancy shall occur from death or other cause, the appointment shall be for the unexpired term. The trustees shall not receive any compensation for their services, but they shall be paid their reasonable and necessary expenses while engaged in the discharge of their official duties.

SECTION 7. The board of trustees shall cause to be made, on or before the first day of January of each year, a report to the governor of the condition of said university; the amount of receipts and disbursements, and for what the disbursements were made; the number of professors, officers, teachers, and other employés, and the position and compensation of each; the number of students in the several departments and classes, and the course of instruction pursued in each; also, an estimate of the expenses for the ensuing year; a statement showing the progress of said university, recording any improvements and experiments made, with their costs, and the results, and such other matters as may be supposed useful. There shall be printed, under the provisions of section seven (7) of the act passed March 30, 1875 (O. L., volume 72, page 179), in pamphlet form, one thousand copies of said report for the general assembly, one thousand for the president and faculty of said college, and three thousand copies for distribution by the trustees in their several districts, in such manner as they shall deem best for the interests of said university. The president of said university shall transmit by mail one copy to the secretary of the interior, and one copy to each of the colleges which are or may be endowed under the provisions of the act of congress of July 2, 1862.

Under the provisions of sections 2 and 3 of this act, the present Board was appointed and confirmed, and received from the Governor, on the

19th day of May, 1878, their several commissions, for the following terms:

James B. Jamison, for the term of one year.
S. H. Ellis, for the term of two years.
Stephen Johnston, for the term of three years.
Thomas J. Godfrey, for the term of four years.
Alston Ellis, for the term of five years.
T. Ewing Miller, for the term of six years.
J. H. Anderson, for the term of seven years.

After taking the oath of office, and effecting a temporary organization, the Board proceeded at once to a general inspection of the grounds, buildings, library, apparatus, cabinets, and other equipments of the institution. An opportunity was also offered of witnessing the military drill.

During the subsequent sessions of the same meeting a permanent organization of the Board was effected by the election of—

President—Thomas J. Godfrey.
Secretary for balance of fiscal year—Joseph Sullivant.
Treasurer for same term—Henry S. Babbitt.
Executive Committee—Messrs. J. H. Anderson, T. Ewing Miller, and Stephen Johnston.
Farm Committee—Messrs. S. H. Ellis, James B. Jamison, and J. H. Anderson.
Finance Committee—Messrs. T. Ewing Miller, Alston Ellis, and Stephen Johnston.

No change was made at that time in any of the employés of the University. Mr. Chas. E. Thorne was continued as Farm Superintendent until April, 1879.

During the year five meetings of the Board have been held—one in May, one in June, one in September, and two in November—detailed reports of the proceedings of which can be found on the succeeding pages of this report.

The Board have, by these repeated sessions, endeavored to acquaint themselves with the condition and progress of every interest connected with the University, and to adopt such measures looking to the management of the farm, incidental repairs, and improvement of the buildings, the efficient and faithful discharge of professorial duties, the attendance and deportment of students in the class-room and military drill, and other matters pertaining to the general welfare of the institution.

The last session closed June 19th, 1877, with one hundred and fifty-five students in attendance. The number of matriculates for the present terms is one hundred and ninety-eight. Though not equal in number to the class of last year at the same period, the standard of scholarship is higher. Fifty-two counties of the State are now represented in the University.

A list of the corps of professors now engaged in the various departments is given on a previous page of this report.

At the June meeting of the Board a communication was received from Thomas C. Mendenhall, Professor of Physics and Mechanics, tendering his resignation, with a view to accepting a similar professorship in the Imperial University of Tokio, Japan. Professor Mendenhall is a gentleman of eminent ability, greatly devoted to his calling, and well calculated to elevate the rank of his department, and it was with deep regret that the Board parted with his services in the institution.

After correspondence with eminent physicists and educators, the chair thus vacated was tendered to the present incumbent, S. W. Robinson, Professor of Mechanical Engineering and Physics in the Illinois Industrial University, who entered upon the duties of the same at the beginning of the session.

About the same time, President Orton offered his resignation as President of the University, but did not propose to sever his connection as Professor of Geology. He has filled the position that he now holds with dignity and honor since 1873, and the necessity of having such an executive officer at all times in the institution, together with the difficulty in immediately and properly filling so responsible a position, induced the Board to lay his resignation on the table for future consideration and action.

The requirements of an institution in which are taught so many and different branches of learning, thus calling for large, scholarly attainments in its literary head, and which needs both to be presided over in its internal affairs with great discretion, and made reputable and attractive without, demand great care and consideration in the selection of a fitting representative head. Hence no definite action has yet been taken, looking to a new appointee.

The classification of students, the number in each department, and the hours per day occupied in recitations, together with the course of instruction as pursued by each professor, will appear in detail in their several reports herewith submitted as part of this report.

For the more perfect regulation of the department of Military Science and Tactics, a complete set of rules (see Board proceedings) have been adopted, giving it a position among the schools of the University and the instruction therein an academic value. The President of the Board is now in correspondence with the War Department for the purpose of securing the detail of Lieutenant Lomia as professor of this department for two years longer.

The chair of Civil Polity and Political Economy has been abolished.

Arrangements have been made for a course of popular lectures by the Faculty on the sciences pertaining to agriculture, for the benefit of all who may desire to attend. These lectures are to begin January 9th, and continue four weeks, and we have reason to believe will be largely attended, and do much so call the attention of the public to the liberal and practical character of the instruction furnished for the industrial classes.

The Library has been increased by the purchase of books on agriculture, botany, mining, metallurgy, English language and literature, and geology.

The boarding house was thoroughly repaired, and leased to a satisfactory party, Hon. E. P. R. Baker, who is required to furnish good boarding, lodging, and fuel to students at a rate not to exceed $3 50 per week, and under whose management it is now being well conducted.

Two thousand circulars, conveying information concerning the course of instruction, terms of admission, and other desirable information, with the report of 1877, have been widely distributed.

The former officers of the Board were reëlected for the ensuing fiscal year, except the Secretary, whose place was supplied by the election of Albert Allen, of Columbus.

The salaries of all officers of the Institution, the compensation of employés, and all receipts and disbursements, in detail, will appear in the report of the Treasurer.

Mr. Charles A. Barton, of Portsmouth, Ohio, has been employed agent of the University to have the care and sale of the Virginia Military lands in this State.

The Board regret that they have not been able as yet to reach any positive settlement with Mr. Leete, who was employed by a former Board to locate and make sale of these lands. The matters at issue are now referred to Attorney-General Pillars. Judge M. A. Daugherty, Hon. Stephen Johnston, and Hon. Thomas J. Godfrey, with full powers to investigate and take such action as in their judgment is both just and equitable to Mr. Leete and the University, and that this action shall be final and conclusive.

The Board beg leave to call the attention of the Legislature to that portion of President Orton's report which refers to the chemical analyses of the minerals and fertilizers of the State that the University is obliged by law to furnish, and to ask favorable consideration for the amended scheme which will be presented during the coming session.

Without presenting an itemized estimate of the expenses of the University for the ensuing year, it will be safe to say that the salaries of the professors and officers, the wages of other employés, the unavoidable expense of repairs, and the needed improvements to preserve the *present*

status, it is reasonable to suppose will require the full amount of the annual income derived from the endowment fund. Besides these *ordinary* and *usual* expenditures, there are other matters of vital importance to the well-being of the University, calling for some appropriation from the State. Among these are the following, viz:

For equipment of Mechanical Laboratory (see report of department)	$5,000 00
solar compass and telescope	1,000 00
wall and table cases for geological museum	1,500 00
gymnastic and drill hall (needed in winter)	6,000 00
green-house for Botanical Department	5,000 00
landscape improvements on campus	2,500 00
desks in Chemical Department	300 00
equipment of Physiological Laboratory	750 00
equipment of department of Drawing and Engraving	1,500 00
farm improvements and stock	5,000 00
Total	$28,550 00

Since the organization of the College in 1873, the only appropriation made by the State to this institution was the insufficient sum of $4,500, to equip a School of Mines and Mining Engineering. The institution has been maintained and supported *alone* from the interest accruing on the fund derived from the sale of lands under the Congressional grant, the Virginia military lands, and the Franklin county bonds.

The Legislature has at different times authorized the payment of the necessary and reasonable expenses of the Board of Trustees while in the discharge of their official duties, but have failed to make any appropriations from year to year to meet the same since 1871. These expenses to the present time aggregate $4,253.84, and have been paid out of the interest fund of the University. It seems but just that this sum should be returned by the State.

The success of the University has been hitherto, and is still, greatly hindered by reason of its meager financial resources, and the Board can but express the hope that the same fostering care extended by the Legislature through legitimate appropriations to *other* State institutions, will not be witheld from this. Every State has, by the law of the general government creating these institutions, been made, in a special manner the guardian of this national gift, relying in each case upon a commendable rivalry and State pride to encourage their growth and usefulness. In this just competition, other sister States have made large annual appropriations to their several institutions, and we have reason to hope and believe that Ohio will not be indifferent to the wants and welfare of *her* ward.

ALBERT ALLEN,
Secretary of the Board.

REPORT OF PRESIDENT.

HON. T. J. GODFREY, *President of Board of Trustees of Ohio State University:*

DEAR SIR: I hereby present my sixth annual report of the institution now under your care. The report covers the year ending November 1, 1878.

Several important changes have taken place in the institution during the year.

1. In the first place its name has been changed by act of the Legislature. The old title was a cumbrous and misleading one—misleading, at least, as far as the present organization and courses of study are concerned. To many who heard it, the name *Agricultural and Mechanical College*, suggested an institution in which compulsory manual labor on the College farm and the teaching of the several mechanical trades, were leading and essential features. Such persons, when they found the institution a well equipped and liberally conducted school of science, would naturally feel that it was false to its appointed mission. I will not enter upon the disputed questions as to the proper aim and work of institutions founded on the land grant. I have only to say that so long as the course of instruction originally established here shall be maintained, the old title would prove somewhat of a misnomer. I have expressed these views in several previous reports and have urged that a change of title might prove advantageous to the institution.

The new name, however, *Ohio State University*, does not seem to me to be free from objection. The term *university* has acquired quite a definite signification, and can be applied, with strict propriety, to institutions of large range and varied faculties only. This institution has not yet attained to university proportions, and calling it a university does not make it one, in all the senses of the word. If the Legislature, however, in this change of title, foreshadows its purpose to expand the college into a university worthy of the name, any present incongruities can well enough be borne.

2. In the second place, the institution has lost during the year one of its most successful and accomplished teachers. Prof. Thomas C. Mendenhall resigned, in June last, the chair of Physics and Mechanics, which he had held from the opening of the college, to accept a similar professorship in

the Imperial University of Tokio, Japan. His department was conducted from the first with signal ability and success. There is scarcely an institution in the country in which so much instruction is given by laboratory methods, in the subject of Physics, as has been furnished in this. The unusual advantages thus offered were appreciated by the students who were gathering here, and the Physical Laboratory has been a constant center of attraction. While Professor Mendenhall's withdrawal from the college was deeply regretted by his associates in the faculty as a loss of no small moment to the institution, they could not but see that he had no right to refuse the unusual opportunities that were offered to him, so honorably bestowed and so well deserved.

3. Prof. S. W. Robinson was called from the Illinois Industrial University to fill the vacancy caused by Professor Mendenhall's resignation. He accepted the position, and entered upon his work at the opening of the academic year, in September last. He held in the Illinois University the position of Professor of Mechanical Engineering and Instructor in Physics. Our professorship covers the same ground, but the subjects are named and have been developed in reverse order, almost the whole equipment and the main force of the department having been given to Physics. I believe that the best interests of the University have been subserved by the course thus far pursued. We have now a Physical Laboratory decidedly superior to any other west of the seaboard. In calling Professor Robinson to fill the vacancy, you have secured the best trained and most successful professor of Mechanical Engineering in the West, and in so doing, you have signified your purpose to give to this side of the department a balanced and proportionate expansion. The result will be that, by moderate appropriations, we shall have two well-equipped divisions of this important department. It is necessary to remember, however, that we shall ultimately have full work for two men. The Physical Laboratory would not be what it is if it had not received a very large part of the labor and enthusiasm of the accomplished professor who built it up to its present proportions, nor would Professor Robinson's department in the Illinois University have attained the reputation which it enjoys unless it had always been his main work. The inference is plain, that a division of these subjects must be effected in order to secure the most successful treatment of each. I trust that provision can be made for this result before many years elapse.

The Mechanical Laboratory, with its hand-training and other practical applications, is sure to be recognized as an invaluable addition to our educational resources. It supplements our work on the side where it is most criticised and where it is confessedly weakest. I cordially indorse

the application made by Professor Robinson for increased facilities in his department.

4. During the past year the Department of Mining and Metallurgy has been put into successful operation Its establishment was counted a most auspicious event for the University; its maintenance in efficiency and vigor cannot be an open question. It is true that the number of students now in it is small, but this results from the fact that the work in this department properly and necessarily comes in the later years of the student's college course. A fair proportion of our young men are expecting to enter upon this line of study as soon as they can reach it in due course, and a few have already entered the University expressly to avail themselves of the Mining Engineering course. Such a department in an institution like this could be filled at once with students only by the arts of the charlatan and sciolist. No useful purpose could be answered by crowding its lecture-room with the halt and the blind. Mining Engineering is a special application of knowledge that has been gained in other fields, as Mathematics, Chemistry, Physics, and other fundamental branches. This preliminary knowledge the student must have before he can apprehend or assimilate the specific and technical training imparted here.

By the act of the Legislature which gave to the University the equipment of the Mining Department, a provision was made for the analysis of all the minerals of the State that should be sent in for this purpose, without expense to the parties sending them. The law is crudely drawn in this particular. If its provisions were generally known, and if the University were obliged to make prompt analyses of all the coals and ores and limestones and clays that interest and curiosity should send in, the pittance given by the State for the foundation of the department would soon be swallowed up, and a vast and oppressive burden would be imposed upon the institution.

The present Legislature, seeing that provision was made for mineral analyses at the University without expense to the parties asking for them, sought to extend similar advantages to the agricultural community, and passed an act requiring "the professor occupying the chair in the chemical and mechanical department" of this institution to furnish, without charge, an analysis of each and every artificial fertilizer offered for sale in the State that shall be sent to him for this purpose. A penalty is further affixed to the selling of such fertilizers without a printed analysis of the same.

This act was, to say the least, not duly considered. To comply with its obvious intent would require the undivided time of more than one

professor. To say nothing of the many grave practical difficulties that must attend the operation of the law as it now stands, it is not probable that the Legislature designed to reduce the teaching force of the University to any such extent as will necessarily follow the efficient execution of its action.

With the real aim of both these requirements I am in hearty accord. They recognize the fact that the State has a right to look to this institution for efficient and practical service in all the departments of applied science. If the University is not able or willing to render such service, then it has certainly failed in its office, and should be called to a strict account. But the demands for service should be intelligent and just and practicable. The present statutes, in my judgment, fail in all of these respects.

The subject is one of real importance to the University, and deserves the immediate and careful consideration of the Board. I can not doubt that the present Legislature would cheerfully amend the existing statutes so as to make them fair and practicable, if the Board should formally call attention to the facts of the case. I am also confident that the professors in charge of the departments concerned could readily devise a scheme by which all the public objects aimed at could be successfully accomplished, while at the same time very many of the demands of corporations and individuals for scientific assistance in their various branches of business could be amply met, and all this without charging the University with a duty that it can never perform or obstructing it in its proper work of education.

5. By the action of the present Legislature the subject of military drill has been made optional. This action changes essentially the *status* of the Military Department. It is still, however, rendering good service to the institution. About one-half of the young men in the University have elected the drill for the present year, and, under the stringent regulations adopted by the Board of Trustees to govern the action of students so electing, a vigorous organization is maintained.

The points above enumerated comprise the new elements and the principal changes in the University for the present year.

In all other respects it has followed in the lines of work and development already laid down. The year is marked by the graduation of the first class of the University. Six young men having duly completed the prescribed courses of study for two of its several degrees, received the diplomas that attest this fact.

The rate of increase in numbers which has held thus far has not been fully maintained this year. During the year three hundred and nine

(309) students have been in attendance, which is an increase of fifty-four over last year's attendance, or a gain of about twenty per cent.

Fifty-two counties of Ohio are represented in the catalogue that accompanies this report. There are one hundred and ninety-eight students enrolled on the register of the present term. At this time last year there were two hundred and eleven names on the list. There is, however, no real falling off in the attendance of properly qualified students. It will be remembered that in 1877 an ill-judged experiment was made in lowering the requirements for entrance to the college. Under these lower demands about twenty students obtained admission to the institution that were in no way properly prepared to do the college work. Most of these students lost their places by failure to sustain examinations before the year went by. The original standard of qualification was fortunately restored one year ago. No one who inspects the questions used in the entrance examinations of the present academic year will demand that the standard of admission shall be lowered. A list of these questions is given in this report.

An effort was made last winter to establish in the college a course of lectures on the sciences relating to agriculture for the benefit of the young farmers of the State who are unable to pursue an extended and regular course of study. The scheme proposed four lectures a day for ten weeks. It was to be illustrated and made as serviceable as possible by the use of the excellent facilities of the institution. No entrance examinations were required. The scheme was widely advertised, but there was no adequate response. Seven applicants appeared, but it was not deemed right to devote the necessary time and effort required for the lectures to so small a number.

Many prominent agriculturists interested themselves in the scheme, and urged the renewal of the offer in a modified shape. In accordance with these suggestions, and with the permission of the Board, the faculty has again arranged a scheme of lectures, which is now offered to the farmers of Ohio. The time of the course has been reduced to four weeks, and Thursday, January 9, 1879, has been fixed upon as the date of opening. The giving of the course has been made contingent upon the application of thirty persons by or before December 9th. This number has not yet been reached. I recommend that a small appropriation be made for the immediate distribution of a circular setting forth the above facts. The announcement has already been made in the summer circular of the University and through the press to a considerable extent, but nothing should be left undone by which the question whether any adequate demand exists in the State for service of this kind, can now

be settled. Despite the failure of last winter I cannot doubt that if the real character of the scheme can be brought fairly before the farmers of Ohio, there will be a large response.

The order of the institution has been excellent throughout the year, and a large amount of earnest and successful study has been done in the several departments.

For specific information as to the work, the equipments, and the necessities of these several departments, you are respectfully referred to the accompanying reports of the University faculty. In regard to their requirements, as stated in the reports, I have only to say that, in my judgment, the wants are all real, and that all the funds that can be granted for their supply will advance the interests of the University.

I trust that the needs of the library will not be overlooked. The books already on the shelves are largely used by faculty and students, and every book that is added comes into immediate requisition.

I call attention to the fact that the University farm supplies a considerable amount of work to students, and that the money so earned prolongs the stay of quite a number of earnest and capable young men in the institution. I am in the constant receipt of letters from others of the same class who desire to meet their expenses, in part at least, by their labor. The farm manager is prepared, I believe, to indicate plans by which a larger amount of labor can be utilized, and I cordially commend the consideration of these plans to the Board. The students that we get in this way know for what they are here, and almost without exception bring to their work a measure of manliness and earnestness that insures success in their scholastic work.

The details of my professorial work can be learned from the following statements:

My professorship embraces the subjects of Geology, Paleontology, and Physical Geography. To it is also added such instruction in General History as has thus far been furnished in the University.

The work in Geology and Paleontology is arranged in a two years' course. The first year's work consists of daily lectures and recitations; the second year's work, of paleontological or laboratory practice. Each student who takes the second year is obliged to give two and one-half hours daily to the museum or laboratory. Classes here are not practicable, and each student needs the constant supervision and assistance of the professor.

My classes during the year have ranged as follows:

Class in First Year Geology, 1877–8	15	members.
" Second Year Geology, 1877–8	3	"
" Physical Geography, 1877–8	58	"

Class in First Year Geology, 1878–9	17	members.
" Second Year Geology, 1878–9	7	"
" Elementary Paleontology, 1878–9	31	"

Whole number of students in department during year	131
Deducting those reported more than once	26
Whole number of different students	105

The class in General History for 1877–8 consisted of 52 students. The whole number of students instructed in my classes through the year amounts to 183.

Additions are constantly made to the Geological Museum. We have some material for exchanges, and the work of collection has never been abandoned. The material already accumulated is valuable, and deserves better care than it is possible to give it now. The need of glass cases for its protection and proper display is imperative. I trust that the Board will be able to take some steps in this direction very soon. It would seem to be an object for which an appropriation might very properly be asked from the Legislature, as the nucleus of the present collection was the property of the State, and was turned over to the University for safe-keeping. To make such a gift without providing the means for its proper preservation, is doubtful generosity.

Very respectfully yours,

EDWARD ORTON, *President.*

OHIO STATE UNIVERSITY, *November* 6, 1878.

DEPARTMENT REPORTS.

CHEMISTRY.

EDWARD ORTON, *Ph.D., President Ohio State University:*

DEAR SIR: I have the honor to present this, my sixth annual report of the Chemical Department.

The number of students enrolled during the past year in the class of General Chemistry was sixty-three. Of these, forty-one remained until the close of the year. The class begins this present year with an enrollment of sixty-four.

The number of students in Analytical Chemistry during the past year was seventeen. This year there are twenty-four students in Analytical Chemistry. Of these, eight are in Quantitative and sixteen in Qualitative Analysis. The course of study in General Chemistry taken by the last class extended through the entire year, with a weekly average of more than four and one-half recitations. Owing to a change in the required course of study, the present class will have daily recitations extending through the first two terms of the year, or for twenty-six weeks. By reason of this change in the time assigned to General Chemistry, I shall be compelled to omit some of the details heretofore presented, but shall endeavor to give the class a well-ordered outline of the science. I shall follow, as far as possible, the mode of teaching described in my fourth annual report.

The course of study in Analytical Chemistry extends, for each student, over two years' time, in which he is expected to average two and one-half hours' daily work. Each student works independently, and advances in his study as fast as his ability and his diligence warrant. After the first few weeks of the year there are almost as many classes in the laboratory as there are students, but I find it profitable to them, as well as convenient to myself, to have them work as far as possible in small groups.

This year we have our largest number in Quantitative Chemistry. Our equipment is just about sufficient for the class. With a larger class, such as I may expect the third term of this year, we shall need a larger drying apparatus, and at least two more balances.

I also recommend that two more desks be ordered in readiness for the third term. With these the west wing will have its full complement, and will then accommodate thirty-two students.

Provision is being made for the better ventilation of the laboratory, and for a "poison hood." This is a much needed improvement, and will be every way a gain to the University.

During the past year the progress made by the students in the department was, on the whole, satisfactory. Very many of the class in General Chemistry acquitted themselves with high credit, and the entire class are deserving praise for diligence and universal good behavior. The work done by the Qualitative students is also commended; but I am not fully satisfied with the work accomplished by most of the Quantitative students. The present class start out with fairer auspices, and will probably accomplish more during the year.

Two of the last year's students have returned to the laboratory in order to engage in original research. I have hopes that they may add something to our knowledge of fire-clays and cements. Mr. Howard, of the first graduating class, chose for his thesis "The Iron Ores of the Hocking Valley." An abstract of it is printed with the annual report of the University.

With great respect,

SIDNEY A. NORTON.

NOVEMBER 5, 1878. *Professor of Chemistry.*

ENGLISH AND MODERN LANGUAGES.

President EDWARD ORTON:

MY DEAR SIR: I respectfully submit the following brief annual report upon the department of English and Modern Languages.

There are seven classes, each having a daily exercise of one hour each. The class in English of the required course has 33 members; the two classes in the School of English have 42 members; the two classes in German have 32 members; the two classes in French have 14 members, an exceptionally small number—total in the seven classes of the department, 121. Various students, however, are here for the prosecution of the studies of this department mainly or exclusively, and so are in two or more of these classes; hence the number of *different students* in the department is 112, being fifty-eight per cent. of our total number of students.

A comparison of my class lists with those of Prof. Smith, of the department of Latin and Greek, shows that over 140 of our students—nearly seventy-five per cent. of the whole number—are pursuing at least

one, and over 40 are pursuing more than one of the linguistic and literary studies provided for in our curriculum. This fact is significant as to the needs to be met even in a college in which the sciences are made prominent, and more than justifies the Board in what it is doing to meet these requirements.

Besides our exceptionally full courses in the modern languages, in English Philology, in the History of Literature, in Rhetoric and in Logic, all save our youngest students take part, in due turn, in weekly public rhetorical exercises; these consist of original essays and orations. The revision and production of these is committed to me—the strictly elocutionary teaching of the College being in the competent hands of Lieutenant Lomia.

I am ably assisted by Miss Alice Williams, now in the third year of her service of the University.

Along with the hearing of strictly text-book recitations, go daily oral explanations and applications of the lessons, and courses of more formal lectures upon the several studies of the department. For the theory upon which the several parts of the work of the department are organized and conducted, I refer to the full statement of my report for 1876.

The Board's appropriation of $100 is gratefully acknowledged, but will go but a little way towards even an approximation to an adequate equipment of a department covering so great a range of studies, of studies so essential to a thorough education for any walk of life, and pursued by so many of our students. I earnestly commend the matter to the attention of the Board, with the hope that this department may soon be furnished with helps and facilities relatively equal to those of the several departments of science.

The department is in good order, and I owe my students this public mention of their diligence and good progress.

With great respect, yours, JOSEPH MILLIKIN,

Prof. Eng. and Modern Languages.

BOTANY, AGRICULTURE, AND VETERINARY MEDICINE.

President ORTON:

DEAR SIR: The studies pursued during the past year by classes under my instruction were Structural and Systematic Botany of the required course, Systematic and Economic Botany of the first college year, and first and second years, Agriculture.

Botany of the required course occupied the third term of the year, with recitations daily. The class numbered sixty-five, and was therefore

divided into two sections, which recited in successive hours. By a change made last year, the Botany of the required course was limited to a single term; this enabled the class to finish structural Botany and to begin systematic. A college class of four continued Botany through the year. A class of three is now pursuing the same study. No provision, other than the appointment of a teacher, has yet been made by the University for instruction in Botany. It was made the duty of the Professor of Agriculture to give instruction in this science, and so far he has depended entirely upon the wild flora of the surrounding country for his means of illustration. In making collections for the class in Systematic Botany, not unfrequently every available hour of daylight has been occupied. The employment of a gardener and the erection of a suitable greenhouse, with the assignment of a plat for a botanic garden, would give to this important branch of natural history a rank to which it is justly entitled. A good garden so near a large and rapidly growing city ought to pay expenses from the sale of its products.

First Year Agriculture was studied through the year by a class of ten, which, to accommodate other recitations, was divided in two sections. The subjects which occupied the attention of this class were the origin, composition, and classification of soils, value of different manures and fertilizers, crops, tillage, farm improvement and management. So far as they found time, these students were given employment upon the farm, and received compensation for their services. A class of six is engaged with the same studies the present term.

During the year several experiments were made, under my direction, by Mr. Thorne, Farm Superintendent. These were intended to aid in determining the value of corn for fattening in the cooked, ground, and raw state; to determine the value of the tillage of the growing wheat crop, and the effect of different rates of seeding; the effect of deep plowing and subsoiling, and the value of different manures and fertilizers on meadow, on root crops, and upon corn. An account of these experiments in detail, furnished by Mr. Thorne, is herewith transmitted. It is due to Mr. Thorne that I express my high appreciation of the intelligence and care with which these numerous details were collected and recorded.

The Second Year Agriculture was pursued through the year by a class of eight, which also recited in two sections. The first term was occupied with the varieties of domestic animals, their special adaptations, and their management in health. The second term was spent in obtaining a knowledge of the general principles of disease and of treatment. The third term was devoted to the study of particular diseases. Three students are engaged on the same studies the present term. These

veterinary studies would be greatly assisted if the University possessed a good pathological cabinet. An appropriation for this object was made two years since, but owing to the difficulty of obtaining at that time the articles most desired, nothing was secured. Should the Farmers' Lecture Course be opened in January, as now seems probable, such a cabinet will be more than ever desirable.

From the tenor of many recent articles in the public prints, and the frequency of personal inquiry, it would seem that the farmers of the State are becoming more and more convinced of the need of veterinary science. From assessors' returns to the Auditor of State we learn that stock-owners of Ohio in 1877 lost from the death of animals resulting from disease the sum of $2,511,049, or about three and one-third per cent. of the total stock valuation.

In addition to experiments already mentioned, a series of microscopic examinations were made on the University farm upon the ripening of wheat. From the middle of June until the 8th of July examinations were made daily, with a view to determine whether the starch and gluten of the wheat kernel are deposited simultaneously or in some degree consecutively. The result showed that the full complement of starch is deposited some days before the gluten cells are filled, and consequently that it is possible to cut wheat so early as to deprive the crop of the larger part of its gluten. When cut thus early the kernels are plumper than when more fully ripe, owing to the amount of moisture contained in the starch, and possibly the flour made from such early-cut wheat is whiter, for starch makes a whiter flour than gluten. It should be understood, however, that the market value of flour, other things being equal, is in proportion to the amount of gluten it contains. If future examinations of different varieties of wheat, and in different seasons, confirm these results, it will be possible for Ohio farmers, by cutting their wheat as late as is compatible with harvesting without waste, to bring the quality and price of Ohio flour more nearly to that of Minnesota, and annually add millions of dollars to the value of the wheat crop.

Yours respectfully,

N. S. TOWNSHEND.

DEPARTMENT OF MATHEMATICS AND CIVIL ENGINEERING.

EDWARD ORTON, *President:*

SIR: The following sketch gives a general outline of the work done in the department of Mathematics and Civil Engineering from November 1, 1877, to October 31, 1878, both inclusive. This time, embracing, as it

does, parts of two academic years, includes all the classes for one year and part of those for another. The course of study laid down in the catalogue is closely adhered to, and for this reason a bare reference to that course is deemed sufficient.

The number of students in algebra was 81; geometry, 72; surveying, 41; trigonometry, 34; in the various parts of civil engineering, 34; descriptive geometry, 27; astronomy, 28—a total of 317. But since many of these recited in more than one class, the number of different persons was only 168.

The classes in surveying and kindred subjects were divided into sections of three or four students each, and each section took field exercises twice a week throughout the fall and the spring sessions, unless prevented by unfavorable weather or other sufficient cause. These exercises consisted in taking levels, measuring heights of accessible and inaccessible objects, distances of or between near or remote objects, surveying fields or the farm, measuring irregular outlines by means of offsets, setting out curves by various processes, and, finally, laying out a short line of imaginary railway, and making all the measurements for level, cross-section, slope, contour, abutments of bridges, and culverts, and estimating the amount of earthwork and probable cost, and making appropriate drawings of it all.

In the winter session, when field work would ordinarily be impracticable, the students were instructed in the various kinds of drawing pertaining to the work of engineers, viz., ordinary platting, topographic, isometric, and axionometric work, shades and shadows, and the general principles of perspective.

The number of my daily recitations is usually four, of one hour each; from one to two hours a day are also required to oversee and manage the field work and the papers growing out of such work, or for regular instruction in the various kinds of drawing executed by the pupils. Besides, there is almost always some one who needs extra aid to bring him up to the proper standard, or to keep him there; and if good fortune smiles a little, and no further aid is needed, generally two or three more are ready to take his place. Half an hour a day, at least, is required for this work. It will be only a fair statement to say that all the time from eight in the morning till five in the afternoon is given up to the work of the College; also about half the Saturdays, and many evenings in the year. No recitation has been lost or any other duty omitted within the year, or at any time since the College opened in 1873.

R. W. McFARLAND.

ZOOLOGY.

OHIO STATE UNIVERSITY,
COLUMBUS, OHIO, *November* 1, 1878.

EDWARD ORTON, PH. D., *President:*

DEAR SIR—I have the honor to submit the following report of the condition and work of the department of Zoölogy and Comparative Anatomy.

The equipment of the department has been increased during the past year by the purchase of an extensive series of specimens of the native birds of Ohio, prepared and mounted by Mr. Davie, the taxidermist, of this city. No other additions of importance have been made.

In this connection I would again express my earnest hope that at an early day the Trustees of the University will provide for the purchase of at least a few pieces of apparatus, for practical instruction in and laboratory study of Physiology. This alone, of all the branches of Natural Science taught in the University, is studied from books only, at present. The outlay of a few hundred dollars would enable the students of Physiology to derive a large share of their knowledge from nature, instead of receiving it all at second-hand, as now; and the increased value of such knowledge, not only to those who have the lives of their fellow-men in their keeping, but also to those who have to do with the breeding and care of our domestic animals, would more than repay the expense.

And this brings me to the mention of a want that is still more pressing, viz., that of a current expense fund, raised either by an appropriation or by a small laboratory fee, to be so applied as to meet the running expenses of the department. By referring to the exhibit below, it will be seen that the number of students in the higher classes in this department is rapidly increasing, and the increased amount of material to be provided can no longer be trusted to a chance supply. A score of students expect to enter the dissecting-room this winter: at least half a dozen animals a week must be furnished them during the greater part of next term, if they are to have the means of getting even an elementary knowledge of the structure of the domestic animals and their nearest allies, in the only way in which real knowledge may be obtained. It may be possible to teach Physiology in an efficient manner from books alone, if a good foundation has been laid in a practical knowledge of Anatomy; but where the foundation is defective, what can be expected of the superstructure? I trust that you will see the importance of bringing this matter to the attention of the Trustees in such way as to insure some definite action.

But little remains to be said concerning the work of the department, since little change has been made since last year. Cleland's excellent text-book continues in use in the class in Elementary Physiology; Orton's Zoölogy has been used during the past year by the elementary class, with indifferent success; Foster's Text-Book of Physiology comes as near meeting the wants of our advanced classes as any text-book alone can do; in Comparative Anatomy, I have returned to Mivart's Lessons, after a year's experience with Huxley's Manual; the advanced students in Zoölogy use no text-books whatever, laboratory work being supplemented by lectures throughout the year.

The number of students in this department during the past year, and the classes, are as follows: During the winter and spring terms of last year, Elementary Zoölogy, sixty-six; advanced Physiology (and Histology,) six; a special class that read Human Anatomy with me, two; Veterinary Anatomy, one. During the fall term of this year, Elementary Physiology, forty-nine; Comparative Anatomy, twenty; advanced Zoölogy, five; making a total enrollment of one hundred and forty-nine. Deducting eighteen who were enrolled in more than one class, the number of students working in the department for the year is one hundred and thirty-one.

Accompanying this, I present a detailed statement of the present equipment of the department, in accordance with the request of the Board of Trustees.

All of which is respectfully submitted.

ALBERT H. TUTTLE, *Professor.*

MILITARY SCIENCE AND TACTICS.

OHIO STATE UNIVERSITY,
COLUMBUS, OHIO, *November 5th*, 1878.

EDWARD ORTON, *Ph.D., President Ohio State University:*

SIR: I have the honor to make the following report of the departments under my charge:

I. MILITARY SCIENCE AND TACTICS.

The law of optional drill has given me eighty-two (82) members, which is about fifty (50) per cent. of the male students in attendance at the University. This number is organized into two companies. At present the new students are being instructed in the squad and company drills, while the old cadets are exercised in artillery drill, in target practice,

and in the duties pertaining to sentinels on post. In due time skirmish and battalion drills, bayonet exercise and ceremonies will be taught as heretofore.

The strict but just regulations which the Board of Trustees have made regarding the military department, have already been productive of the greatest good, bringing to the ranks, the more cheerfully, young men of whom the University will yet be proud.

Nevertheless, the State law making the drill optional is much to be deplored, and I earnestly hope that military training may again become obligatory upon all the students as formerly.

Theoretical instruction in the military department is given, as usual, in two classes. During the first year, Tactics and Army Regulations are taught, lectures being given to the advanced class on Field Engineering, Military Law, International Law, Military History (illustrating strategic principles), and the Science of Artillery. In the preparatory class there are twenty-five (25) students, and in the advanced class there are six (6). A drill hall for inclement weather is very much needed.

II. MATHEMATICS.

The share of my work in this department includes Analytical Geometry of two and three dimensions, the Differential and Integral Calculus, and Plane and Spherical Trigonometry. This last subject being placed in the last term of the academic year, I have opened for the present with eight (8) students, who have taken up Analytical Geometry. This class makes daily recitations, and it will go through the study of the Calculus by the end of the present University year.

III. ELOCUTION.

Two hours a week are devoted to this study. The class at present numbers twenty (20) members, and is constantly increasing. As there has been found no University hour suitable for the majority of the class, the plan has been adopted of giving half hour rehearsals to students individually, at such times as are found convenient in each case. The members of the class, however, are called together to declaim the rehearsed pieces as often as practicable.

If I may be permitted, I would respectfully suggest that this instruction be made available only to the three higher classes of the University. In this way students in the advanced classes would receive more frequent individual training than by the present plan—a thing which might be desirable.

In conclusion, I would urge most strongly that two prizes in money, or in anything else, be offered by the Board of Trustees, one to the best declaimer of prose, and the other to the best declaimer of poetry, the awarding of the prizes to take place under the control of the University Faculty.

I am, sir, very respectfully, your obedient servant,

LUIGI LOMIA,

U. S. A., Professor of Military Science and Tactics and adjunct Professor of Mathematics.

MINING ENGINEERING AND METALLURGY.

EDWARD ORTON, PH. D., *President:*

SIR: I herewith submit my first annual report.

The establishment of the department of Mining Engineering was so much delayed by the sudden death of Prof. Newton, who was the first appointment to this chair, and by my own engagements in the field, that no beginning was made until the end of the first term. Three students entered, but one was induced to abandon the study by the offer of employment in his profession as civil engineer, and instruction was continued with only two in the full course, and one other who entered for a special course in mineralogy.

The chemical laboratory required by the State law was put in operation, and during the remaining two terms eighty-six analyses and assays were made and reported to parties sending in the samples. Seven analyses were uncompleted at the end of the academic year, the material not being received in time. In the work of analysis I was efficiently assisted by Mr. C. C. Howard, a member of the graduating class.

That assistance has failed me this year, and in spite of the fact that I am occupied four and a half hours daily with lecture and other educational work, and shall have five and a half hours during the third term, I have been obliged to give constant attention to analytical work for the State. Nine analyses have been made, and about thirty others are awaiting their turn. The material already received is more than I can possibly finish during the whole year.

Under these circumstances, I respectfully request the Board to appoint an assistant to carry out this work under my supervision. There is no other way of complying with the law which allows the residents of Ohio to send in material without limit, for analysis *gratis*.

The work of analysis has not been the only mode in which the laboratory under my charge has served the State. During the winter I was called upon by committees of the Senate and House to report upon the oils sold for illuminating purposes, and also to determine the limits of safety and to supply a proper test to be enforced by law. Examination of the illuminating oils then in the market, showed that they were very unsafe, and a law was passed imposing a flash test of 120° Fahrenheit, made according to a method furnished by me.

From the appropriation made by the Legislature for the department of Mines, Mining, and Metallurgy, I received $2,736.51, which was expended as follows for the double purpose of establishing a State laboratory and providing the means for educational work:

FOR THE STATE LABORATORY.

1.	Fixtures	$324 29	
2.	Supplies	1,456 38	
			$1,780 67

FOR EDUCATIONAL PURPOSES.

1.	Assaying apparatus and ores	$326 43	
2.	Mineralogy	589 14	
3.	Books and freight	40 27	
			955 84
			$2,736 51

From the appropriation for 1878–9, there has been expended—

For	minerals	$46 50
"	drawing materials	85 02
"	laboratory supplies (uncompleted)	5 15
		$137 67

The educational apparatus has, therefore, cost about one thousand dollars, and includes a student's collection of minerals, which, though not large, contains nearly every species with which the mining engineer needs to become familiar, and the instruction given by its aid has been quite satisfactory. For assaying, the equipment is very thorough, and will afford students an opportunity of obtaining a practical knowledge of this art, which is of especial value, since it is one of the most frequent means of obtaining employment. Though the materials are mostly destroyed in the act of making assays, the supplies are sufficient to keep this branch of the department in active operation for some years with only insignificant additions.

With the small appropriation granted by the State, I was not able to make any provision of drawings or models for mining or metallurgy, but

have furnished the students with some material from my own collection. From the same source I have been able to make use of a valuable series of ore-dressing products obtained in the copper and zinc industries.

The department now gives thorough instruction in Mining and Metallurgy on a scale which is not surpassed by any mining school in America. All the courses are maintained with thoroughness, and the slurring over of important subjects, which is sometimes caused by lack of time, is not permitted here, where the length of our course allows the student full time for his work. As now organized, the course in Mining Engineering requires four years study, and is conducted by six professors, three of whom teach the general subjects of geology, chemistry, and German, and three others teach civil, mechanical, and mining engineering. Mathematics, drawing, and physics are either incorporated into these courses, or required of the student before entrance.

Three and a half hours daily for two years are spent in the special mining studies—a time which is sufficient for extended instruction in metallurgy, mining, ore-dressing, assaying, and the theory of mineral deposits. The mode of instruction is by lectures, fortified by text-books wherever possible.

In addition to the special work of my department, I have undertaken to give a course in Mineralogy to the second year preparatory students. That class will number about forty members.

In the Mining Department there are now five students, two in the first, and three in the second year studies.

As now organized, the two years' course is divided as follows:

First year—Mineralogy, Mining, Ore and Coal Washing, and Assaying.

Second year—Metallurgy, Drawing, and Mine Sections.

Respectfully submitted,

JOHN A. CHURCH,
Professor of Mining and Metallurgy.

PHYSICS AND MECHANICS.

OHIO STATE UNIVERSITY,
COLUMBUS, *November* 2, 1878.

EDWARD ORTON, *President of the University*:

DEAR SIR: Brevity might naturally be expected of this, my first report, from the fact that my whole term of service here is included within two months. Indeed, it might be so, were it not desirable that a proposed plan for some parts of my future work be presented.

The number of students in classes under my charge is sixty-nine, distributed as follows: Elementary Physics, forty-six; Physical Laboratory, ten; Mechanical Laboratory, ten; Mechanism, 3. Four students, however, are in two classes, making the whole number of persons sixty-five.

PHYSICS.

Instruction in this subject has been given as heretofore, partly by use of a text-book and partly by lecture, for the elementary class; and for the advanced class mostly by the actual use of the instruments by the individuals of the class, each student's own data being reduced by him to the final results by computation.

It is believed that for the best interests of the elementary class a somewhat more elementary text-book should be used, and that the class be held during the second and third term of the year, instead of the first and second. Both of these would improve the student's chances for comprehending the subject, which, as at present, seem somewhat against him. If, then, the student begins his higher work in the fall term by the use of a higher text-book, accompanied by lectures on the more difficult topics, and in the winter begins his physical laboratory practice, the student's work in physics is not only continuous, but progressive, from the lower to the higher, without the intermission of a term. This arrangement would also admit of one recitation per day only, in physics, when otherwise there would be two part of the time, and none the rest.

Much credit is due Mr. Sidney H. Short for valuable aid in the Physical Laboratory, without which it would be exceedingly difficult, if not impossible, to do justice to all the classes in consequence of the extra work now demanded in mechanics. The difficulty would, however, be greatly relieved if the laboratory exercises could be so provided for as to allow the students of each laboratory to all come at once.

MECHANICS, OR MECHANICAL ENGINEERING.

Instruction can now be given in most of the branches which qualify the student for the degree of Mechanical Engineer. The only lack is in the Mechanical Laboratory facilities. Though it is contended by some that practical instruction in mechanic art is not properly part of the work of colleges, yet it is held by others, on a much more rational basis, to be such. Those who oppose would have the young man get his practice at an apprenticeship. But there is one objection to this, and one great difficulty in the way of it. The objection lies in the waste of

time—four years at an apprenticeship and four years in college make a term of eight years of study, which is too slow for the rate of progress of to-day; especially so, when the same, if not even more, can be done in the one term of four years while at college by collocating the instruction in practice and principles. And why should not instruction in mechanical engineering have its proper aid from a laboratory as well as other branches of education? The difficulty named lies in the fact that the apprenticeship system is a thing of the past, it having been killed by the modern methods of manufacture. The great factories of to-day nonplus individual production, and form centers where machines take the place of skill. Accomplished foremen and superintendents are, however, still needed at these mechanic art headquarters, whose responsibilities expand with the capacity for production. These the colleges and universities of the land must produce, and in these colleges practical instruction must find an asylum where trades unions and mob rule can not molest it.

The instruction in mechanic art which, it is believed, should be provided for at this University, by fitting up the Mechanical Laboratory, may be indicated thus: It should extend at least through four terms, or one and a third years, one exercise per day. Two years would be still better.

The first term should consist of laboratory exercises in elementary practice four times a week, with one lecture per week on tools and their use, and methods of practice. This practice would be elementary, because confined to single pieces, and not including the fitting of parts together. Also, the practice should be guided by the eye, and not by hand tools of precision, such as the square, rule, callipers, etc. The eye needs its training as well as the hand. This practice should be made up of lessons in wood work preparatory to pattern making, in moulding and casting of brass, in the elementary operations of forging, such as lengthening, shortening, bending, welding, etc., in the elementary operations of the fitter's bench, such as chipping, filing, finishing, etc.

In the second term the above operations may be carried on to more complex pieces or forms, with the addition of machine tool work in elementary practice, such as preparatory turning, boring, planing, milling, drilling, etc., of iron. Hand turning should be included.

In connection with this practice, one exercise per week should be devoted to the designing and drawing of machine elements, such as cranks, bearing-boxes, stuffing-boxes, stub-ends, pistons, etc.

In the third term, the practice should be extended to the fitting of parts together in pairs, such as chipping grooves and filing pieces to fit, planing grooves, and pieces to fit; boring holes, and turning pieces to fit;

fitting wood and wood, wood and iron, etc.; also, the surfaces of pieces should be finished or polished by use of emery, burnishers, etc. The student should also be familiarized with the use of the scraper in making perfect joints.

In connection with this third term's work, there should be one exercise per week at inventing and drawing of simple machines, for doing such acts as bending wire into staples, cutting out wooden combs, turning handles, etc.

The fourth term should either follow or be in connection with the study of mechanism, so that problems in mechanism can be worked out, and the parts constituting the movement, and its frame-work or supports, made in the laboratory. This would be construction, the results being models of mechanical movements suitable for the cabinet of models. In this way the cabinet may be constantly increased. In the terms preceding this we have instructive practice, while in this, constructive practice, in which we have application of the skill acquired in the earlier practice.

The remaining technical studies are such as the strength of materials, thermodynamics, machinery and mill-work, prime movers, machine designing and drawing, etc., which will be provided for by lectures, for the most part, as classes mature for them.

The course, as above outlined, indicates that our present pressing need is for machine-tools, and power for the further equipment of the mechanical laboratory. These are seen to be needed within the next term or winter term, and as the procuring and installing of them is a matter of some considerable time, provision should, if possible, be made for it at once. The things needed are a steam engine of eight-horse power, shafting, with its pulleys, belting, and hangers, two engine-lathes, two hand-lathes, one planer, one milling-machine, one drilling-machine, one shaping-machine, one grindstone for power, and one blower for forges. The prices have not been obtained, exactly, but would be about as below:

Two engine-lathes	$1,000 00
Two hand lathes	200 00
Planer	500 00
Milling-machine	700 00
Drilling-machine	200 00
Shaping-machine	500 00
Fan	50 00
Grindstone and stand	25 00
Shafting and pulleys	200 00
Engine, boiler, pumps, etc	1,000 00
Gear cutting machine	500 00
Setting up and materials	500 00
Total	$5,375 00

Unless it be considered safe and advisable to carry steam at twenty pounds pressure on the present boilers, a separate boiler would be necessary, which would cost in the neighborhood of $200. At present, the engine could be run from the large boilers.

The appropriation of $600, allowed at the beginning of the term, has been nearly all consumed in putting the laboratory in its present shape. Pains have been taken not only to procure good articles, but to provide for their preservation, and to make the laboratory attractive and inviting.

One of the rooms of the first story has been fitted up with a cabinet case, a few models and blackboards, giving us a room suitable for the lectures, and other higher work of the mechanical branches.

Very respectfully yours,

S. W. ROBINSON.

LATIN AND GREEK.

EDWARD ORTON, *Ph.D., President:*

DEAR SIR: I have the honor to transmit my third annual report for the department of Ancient Languages. The history of the past year presents a record of faithful attendance and successful work for nearly all the students under my charge. The good effects of the preparatory department, established last year, are already seen in the increased interest manifested by new students in the subjects of Latin and Greek, and a corresponding increase in the number electing those studies. The number of different students engaged in studying Latin or Greek, or both, as well as the aggregate membership of the classes, is about double that of last year, in spite of the fact that the total number of students in the University is no larger than last year. This certainly is a significant fact, and one thing which it signifies is, that the young men and women who come to us each autumn recognize the high value of the study of ancient languages as an educational factor, and will meet with eager demand all that is put forth in the way of supply.

The department needs what has been spoken of in previous reports, together with additional facilities for the preparatory classes. It now consists of the regular college classes in Latin and Greek, four in number, taught by myself; and three elementary classes, two in Latin and one in Greek, all three taught by Mr. Cunningham, who is doing excellent work with them. As stated in the outline of our work (for which

see "Courses of Study" in this report), the preparatory work laid out takes the student from the beginning up to the course of regular college work. It thus is analogous to, and virtually a part of, our regular required course.

I present the following tabular statement of the number in my department, comparing it with my last year's report, in order to exhibit the ratio of increase.

	Last year.	This year.
Number of different students in the department	28	57
Total class membership in department	39	74
COLLEGE CLASSES.		
Latin.		
First Year Class	7	13
Second Year Class	1	4
Greek.		
First Year Class	4	5
Second Year Class	2	2
Elementary Latin.		
First Year Class	17	31
Second Year Class	8	15
Elementary Greek	....	4
Total	39	74

The regular class-room work is supplemented by lectures given throughout the year on the subjects studied, and its results are tested by the regular term examinations, as well as by examinations held during the course of last term. During the past year the scheme indicated in the course of study for this department has been adhered to, with one or two trifling modifications.

Very respectfully,

J. R. SMITH,

Assistant Professor of Latin and Greek.

MECHANICAL AND FREE-HAND DRAWING.

COLUMBUS, OHIO, *November* 4, 1878.

EDWARD ORTON, *Ph.D., President:*

DEAR SIR: I submit the following report of Department of Drawing, under my care:

The attendance has been good during the past year. One hundred and eighty-one (181) students have received tuition in the usual branches of

Mechanical and Free-Hand Drawing, embracing drawing from the flat, from plaster casts, in stump and neutral tint, laying on flat tints and lettering, architectural drawing, botanical drawing from nature, illuminating, lithographic drawing, printing and print coloring, also photography.

I have executed diagrams in oil paint for departments of Military Science and Physics, and lettering for the University and Farm.

Diagrams in Lithography have been drawn and printed by students for departments of Chemistry, Geology, and Physics.

I have much pleasure in stating that the diligence and improvement of the students in their work is very satisfactory.

At present about two-thirds of the young ladies of the institution spend more or less time in this department.

Many who are preparing themselves for teaching are anxious to devote as much time as possible to picture writing, which, though one of the oldest, is still one of the most valuable for conveying ideas.

Our range of instruction in the department taking in many forms of picture making, must greatly aid in the formation of a good judgment.

A taste for art is an acquired one, and a standard of excellence can only be reached by familiarity with the acknowledged masterpieces of art production, either by plaster casts or copies from paintings by the usual methods of reproduction. We ought to have these aids to improvement for the students. Nothing is equal to drawing for giving the finger-wisdom necessary to some professions, and indispensable to every skilled workman.

I beg to repeat my application for more advanced flat studies, landscape and figures, more lithographic stones, and greater facilities for photography.

With great respect,

THOMAS MATHEW.

CIRCULAR AND CATALOGUE.

FACULTY.

EDWARD ORTON, PH.D.,
President, and Professor of Geology.

SIDNEY A. NORTON, PH.D, M.D.,
Professor of General and Applied Chemistry.

JOSEPH MILLIKIN, A.M.,
Professor of the English Language and Literature, and of the French and German Languages.

NORTON S. TOWNSHEND, M.D.,
Professor of Agriculture.

R. W. McFARLAND, A.M.,
Professor of Mathematics and Civil Engineering.

ALBERT H. TUTTLE, M.SC.,
Professor of Zoölogy and Comparative Anatomy.

LUIGI LOMIA, M.SC.,
First Lieut. Fifth Artillery, U. S. A.,
Professor of Military Science and Tactics, and Adjunct Professor of Mathematics.

S. W. ROBINSON, C.E.,
Professor of Physics and Mechanics.

JOHN A. CHURCH, M.E.,
Professor of Mining and Metallurgy.

JOSIAH R. SMITH, A.B.,
Assistant Professor of the Latin and Greek Languages.

THOMAS MATHEW,
Instructor in Free-hand and Mechanical Drawing.

ALICE WILLIAMS,
Assistant in Department of Modern Languages.

N. W. LORD, M.E., *Assistant in State Laboratory.*

JOSIAH R. SMITH, A.B., *Librarian.*

MARY F. MORRISON, *Assistant Librarian.*

ORGANIZATION AND EQUIPMENT.

The Ohio State University is founded on the Congressional land grant of July, 1862. By that act a large amount of the public land was turned over to the several States, the proceeds of the sales to be devoted to the better education of the industrial classes. The share of each State was proportioned to its representation in the National Legislature, and thus six hundred and thirty thousand acres came into the possession of Ohio. This munificent gift was unfortunately pressed for sale upon a temporarily overstocked market, and the State realized only fifty-four cents to the acre. The total amount of the sales ($342,450) was, however, put at interest, and when the institution was opened, in September, 1873, the principal and interest together constituted a productive fund of something over $500,000, the annual income from which slightly exceeds $30,000.

The Legislature having passed an act to authorize the several counties of the State to raise money to secure the location of the University, an offer of $300,000 from Franklin county was accepted by the Board of Trustees, and the University was permanently located at Columbus. The money furnished by Franklin county has been mainly expended in the three following items: 1. The purchase of a valuable farm of three hundred and twenty acres within the corporate limits of the city of Columbus. 2. The erection of a spacious and elegant college building and two dormitories for students. 3. The equipment of the various departments of instruction in the University.

The total value of endowment and property at the present time exceeds $1,000,000.

The departments already established, and the provisions made for giving instruction in them, are as follows:

I. PHYSICS.

For this subject ample provision has been made in the equipment of the institution. It is safe to say that, in the opportunities afforded for thorough study in it, the University already surpasses most of the institutions of the country. Its laboratory is supplied with expensive and well-selected apparatus, designed not only for illustration, but also for

original research in all the leading divisions of the science. Students are directed to its use in the way of original investigation as soon as they are properly prepared to undertake such work.

II. CHEMISTRY.

The course in Analytical Chemistry provides full instruction in all departments of the science. In connection with the ordinary work of Qualitative Chemistry, the student is taught the use of the spectroscope, and of the blow-pipe in Determinative Mineralogy.

The course in Quantitative Chemistry includes both the volumetric and the gravimetric methods. The student will also be assisted in any special branch of the science that he may desire, and take up in detail topics which relate to pharmacy, medicine, agriculture, and other sciences in which the principles of chemistry are applied.

III. ZOÖLOGY.

The subject of Zoölogy, as its growing importance well deserves, has been assigned to a distinct professorship, and means have been provided for making the instruction in this subject thorough, practical, and extensive. A large amount of material, selected with special reference to its availability in teaching, has already been accumulated.

A dissecting-room, with good facilities for the study of veterinary anatomy, is also furnished, while for practical training in microscopy there have been supplied eight microscope stands, representing all the principal modes of construction, and nineteen objectives, giving powers up to 2,500 diameters.

IV. BOTANY.

Permanent provision has not yet been made for this subject, but the Professor of Agriculture will give instruction in it for the present. By the will of the late William S. Sullivant, Esq., the library of this distinguished botanist has come into possession of the University. It contains not only all of the standard treatises on the subject, but many rare and valuable works, as the *Icones Muscorum*, the *Flora Braziliensis*, etc., etc. An herbarium, representing quite completely the flora of Ohio, is accessible to the student.

V. GEOLOGY.

The University is able to present unusual advantages for the study of Geology. By act of the Legislature it has been put in possession of all the collections made by the State Geological Survey during its five years of service, and these collections have been supplemented by valuable

additions of fossils and minerals from various sources. The State collection embraces a very complete representation of every geological formation shown in Ohio.

VI. AGRICULTURE.

The department of Agriculture, which also includes the *diseases of animals* and their *medical and surgical treatment*, is provided for in a distinct professorship, the aim of which is to acquaint the student with the theory and practice of a truly rational system in this most important field. The course extends through two years, and is rendered practical by being constantly connected with the work that is carried on upon the farm. Numerous opportunities are afforded to the students in veterinary medicine of observing the treatment of diseased animals.

VII. MATHEMATICS.

Under the two professorships that divide the work of Mathematics between them a full course of instruction is provided for, including also the subject of Astronomy. A term is given to Trigonometry, and one and a half terms are given to each of the two subjects, Analytical Geometry and Calculus. The work of several of the other departments, especially Civil Engineering, Physics and Mechanics, and Chemistry, require the constant and practical application of the knowledge acquired in mathematical study. A term is given to Astronomy, but no special facilities have thus far been furnished in this subject.

VIII. CIVIL ENGINEERING.

This course, which extends through two years, includes surveying, location and construction of roads and railroads, construction of bridges, strength of materials, geodesy, etc. The time of one professor is chiefly devoted to this department. Field work is extensive and varied, for the execution of which a full set of engineering instruments of the finest construction is provided.

IX. MINING ENGINEERING.

This department has now been in operation for a year, and classes are established in the several branches belonging to it. The mining of coal and the manufacture and working of iron are recognized as the leading subjects in it, but full courses of instruction are offered in general metallurgy. The department is well equipped, both for instruction and practical work.

X. MECHANICAL ENGINEERING.

The University is now able to offer excellent advantages in this important subject. A mechanical laboratory has been established and is in successful operation. The Russian system of hand-training has been introduced, which insures the imparting of a measure of practical skill, together with theoretical instruction.

XI. ENGLISH, FRENCH, AND GERMAN LANGUAGES.

In the organization of the University, special prominence is given to the modern languages. Some of the students who resort here will study no language but their own, and it is, therefore, imperative that the opportunities for training in English should be made ample, while all who expect to attain any good degree of proficiency in the natural sciences must certainly acquaint themselves with French and German.

The course of study in the English language and literature has been made especially complete—as full and thorough as any offered in the colleges of the country. Rhetorical training of all students in the regular courses is also included here.

French and German can be pursued in courses as extensive as the needs of the student may require.

XII. LATIN AND GREEK LANGUAGES.

Ample provision is also made for the study of the Latin and Greek languages, not only in compliance with those terms of the organic law of the University which forbid the exclusion of classical studies, and which declare one of the aims of the institution thus endowed to be "the liberal education of the industrial classes," but also because of the great advantage which such study gives in acquiring a thorough knowledge of our own and other modern languges; and, in the last place, but not the least important, because of the relations which they bear to literary, historical, and scientific studies.

XIII. MECHANICAL AND FREE-HAND DRAWING.

Instruction in these subjects has been provided for in the University, and all needful facilities are furnished by which those who wish may acquire skill in the several departments of drawing.

Practical lithography and photography are also taught in this department, all the necessary apparatus being placed at the student's disposal.

XIV. MILITARY SCIENCE AND TACTICS.

In accordance with an act of Congress, an officer of the United States army has been detailed by the War Department to give instruction in the subjects named above. An extended course of lectures and recitations in Military Science is offered to such students as desire it—as is also thorough instruction in military drill.

DEGREES AND COURSES OF STUDY.

Five degrees are offered by the University—two general, viz., Bachelor of Arts (B.A.), and Bachelor of Science (B.S.); and three special, viz., Civil Engineer (C.E.), Mining Engineer (M.E.), and Mechanical Engineer (Mech. Eng.)

In addition to these degrees, certificates of work done in the several departments will be granted as hereafter stated.

PRELIMINARY COURSE.

For students who desire to complete a full course of study, and to receive any of the degrees of the University, the following general scheme has been established. When admitted to the University, they shall enter upon a prescribed course of study, which occupies two years. The aim has been to furnish in this two-years' course as much valuable knowledge as possible, and at the same time to lay a proper foundation for subsequent study. This course is constituted as follows:

FIRST YEAR..

First Term—Human Physiology, English Language, Algebra.
Second Term—Physical Geography, Zoölogy, Algebra.
Third Term—Systematic Botany, Geometry, United States History.

SECOND YEAR.

First term—Physics, Chemistry, Geology.
Second Term—Physics, Chemistry, Geometry.
Third Term—General History, Mineralogy, Plane and Spherical Trigonometry.

It is believed that when the student has completed the above-named course, his judgment and taste will be so formed that he can decide intelligently upon the particular line in which his study shall henceforth lie. A large liberty is therefore accorded to him in his subsequent college work.

ADVANCED COURSES.

The remaining studies of each department of the University, with the exception of Mathematics, Military Science and Drawing. are thrown into two years, courses of daily recitations, and six of these courses (or their equivalents) are necessary for graduation.

Furthermore, tho departments of the University are divided into three schools, termed respectively—

I. *The School of Exact Sciences*, embracing Mathematics, Civil Engineering, Physics, Mechanical Engineering, Chemistry, Mining and Metallurgy.

II. *The School of Natural History*, embracing Botany, Zoölogy, Geology, and Agriculture.

III. *The School of Letters and Philosophy*, embracing the English Language and Literature, German Language and Literature, French Language and Literature, Latin Language and Literature, and Greek Language and Literature.

The only restriction upon the liberty of the student who seeks one of the general degrees, in the remainder of the courses, is that one of the six required courses shall be taken from each of the schools above named.

If he is a candidate for the degree of B.A., the remaining three courses shall be selected from the School of Letters.

If a candidate for the degree of B.S., he must make his selection of the three additional courses from the Schools of Natural History and Exact Sciences.

t will be understood that the different subjects named in the work of the several years, are those from which selection can be made according to the plan already given.

The order of studies for these degrees is shown in the appended schedules.

Credit for work done in the departments of Military Science and Drawing is given to the student in such school as the Faculty, upon consideration of the individual case, shall deem best.

1. *For the Degree of Bachelor of Arts.*

First Year.	1. English. 2. German. 3. French.	1. Latin. 2. Greek.	1. Mathematics. 2. Qualitative Chemistry. 3. Physics. 4. Civil Engineering. 5. Mining Engineering. 6. Mechanical Engineering.
Second Year.	1. English. 2. German. 3. French.	1. Latin. 2. Greek.	1. Quantitative Chemistry. 2. Physics. 3. Civil Engineering. 4. Metallurgy. 5. Mechanical Engineering.
Third Year.	Language.	Language.	1. Botany. 2. Geology. 3. Zoölogy. 4. Anatomy and Physiology. 5. Agriculture.
Fourth Year.	Language.	Language.	1. Botany. 2. Geology. 3. Zoölogy. 4. Anatomy and Physiology. 5. Agriculture.

2. *For the Degree of Bachelor of Science.*

First Year.	1. Qual. Chemistry. 2. Physics. 3. Mathematics.	1. Botany. 2. Geology. 3. Zoölogy. 4. Anatomy and Physiology. 5. Agriculture.	1. English. 2. Latin. 3. Greek. 4. German. 5. French.
Second Year.	1. Quant. Chemistry. 2. Physics.	1. Botany. 2. Geology. 3. Zoölogy. 4. Anatomy and Physiology. 5. Agriculture.	1. English. 2. Latin. 3. Greek. 4. German. 5. French.
Third Year.	1. Comp. Anatomy. 2. Agriculture. 3. Paleontology.	Natural History or Science.	1. Chemistry or Physics. 2. Civil Engineering. 3. Mining Engineering. 4. Mechanical Engineering.
Fourth Year.	1. Comp. Anatomy. 2. Agriculture. 3. Paleontology.	Natural History or Science.	1. Chemistry or Physics. 2. Civil Engineering. 3. Mining Engineering. 4. Mechanical Engineering.

One year in each of two courses may, with permission of the Faculty, be counted an equivalent for a two-years' course in one. Six of these courses will, with three daily recitations, occupy four years. If the number of daily recitations is increased, the time occupied for the completion of the work assigned will be correspondingly reduced.

For the Degree of Civil Engineer.

First Year.	Analytical Geometry. Calculus.	Geology.	French.
Second Year.	Mechanics.	Qualitative Chemistry.	French.
Third Year.	Civil Engineering.	Quantitative Chemistry.	Physics.
Fourth Year.	Civil Engineering.	Economic Geology.	Physics.

For the Degree of Mining Engineer.

First Year.	Analytical Geometry and Calculus.	Qualitative Chemistry.	German.
Second Year.	Geology.	Quantitative Chemistry.	German.
Third Year.	Mechanical Engineering (Thermodynamics, Prime Movers, and Mill Work.)	Mining. Coal and Ore Washing. Theory of Veins.	Mineralogy. Assaying. Drawing.
Fourth Year.	Civil Engineering.	Metallurgy of Iron and Steel. Metallurgy of Copper, etc.	Mining Laboratory Projêt.

For the Degree of Mechanical Engineer.

First Year.	Analytical Geometry. " " " Calculus.	Free Hand Drawing. Descriptive Geometry. Projection Drawing.	French.
Second Year.	Mechanical Laboratory.	Metallurgy.	French.
Third Year.	Mechanical Laboratory. Mechanics.	Physics.	Rhetoric and Logic.
Fourth Year.	Thermodynamics. Prime Movers. Mill Work.	Strength of Materials. Drawing.	Geology.

A student who has taken a degree, can take any other, by completing the additional work required for such degree.

The range of instruction proposed in the several departments can be learned from the appended statements:

THE SCHOOL OF EXACT SCIENCES.

MATHEMATICS.

ONE YEAR.

First Term—Analytical Geometry of two dimensions.

Second Term—Analytical Geometry of three dimensions; Differential Calculus.

Third Term—Integral Calculus.

CIVIL ENGINEERING.

FIRST YEAR.

First Term—Surveying, Navigation.
Second Term—Descriptive Geometry, Isometric Drawing, etc.
Third Term—Astronomy, Shades, Shadows, and Perspective.

SECOND YEAR.

First Term—Locating and Constructing Roads, Railroads, etc.
Second Term—Mahan's Civil Engineering, Strength of Materials, etc., Geodesy.
Third Term—Bridges and Bridge-Drawing, Stone-Cutting, Walls, Arches, etc.

Text-Books.—The works of Loomis on Algebra, Geometry, and Astronomy. In parts of the course, works by Davies, Warren, Church, Gillespie, Mahan, Haupt, Worthen, and others.

The parts of Chemistry, Physics, and Geology especially pertaining to Civil Engineering are studied under the direction of the professors in those departments.

In addition to the use and study of the text-books, the students are taught and practiced in the use of various astronomical and engineering instruments—the level, the transit, the plane-table, the sextant, the globes. They have practical field-work throughout the year, excepting only when the inclemency of the weather does not admit of it. The work consists in taking difference of level, running lines, measuring horizontal and vertical angles, determining the variation of the magnetic needle, finding the latitude by the pole-star and by meridian altitudes of the same; in fine, every variety of appropriate work which can be executed, is regularly, systematically, and thoroughly done.

PHYSICS.

The full course in Physics is completed in two years. It embraces three kinds of exercises, as follows:

First—Recitations in which a text book is used as a guide.

Second—Illustrated lectures, consisting of experiments exhibiting the phenomena of Physics.

Third—Personal experimentation, in which the student himself uses such apparatus of the laboratory as furnishes results suitable for recording and reporting.

ORDER OF EXERCISES.

First Year.

First Term—Principles of Physics, and Illustrated Lectures.
Second Term—Physical Laboratory: Acoustics, and Optics.
Third Term—Physical Laboratory: Optics.

Second Year.

First Term—Physical Laboratory: Heat.
Second Term—Physical Laboratory: Heat and Electricity.
Third Term—Physical Laboratory: Electricity and Magnetism.

The laboratory work will consist either of reviews of the experimental determinations of others or of original investigations. The data must be carefully noted, the results worked out, and all reported on the regulation-paper of the department. These reports will be critically examined as to neatness of appearance and accuracy of results. Per-

spicuity should be studied. The subjects and topics should be separated by proper headlines, and the data and results should be put in tabular form where admissible.

Text-Books and Works of Reference.—Atkinson's and Ganot's Physics; Deschanel's Physics, Kohlrausch's Physical Measurements, Pickering's Physical Manipulations, Stewart's Heat, Jamin's Physique.

MECHANICAL ENGINEERING.

This course is intended for those who desire to prepare themselves either for the profession of Mechanical Engineering, for superintending the construction of machinery, or for managing machinery in manufacturing establishments. In it instruction in Principles is combined with Practice. The former is mostly given by lectures, while the latter is confined to the Mechanical Laboratory.

The course includes the following special studies, all of which must be passed before taking the degree:

MECHANISM AND DRAWING—ONE YEAR.

First Term—Principles of Mechanism.
Second Term—Machine Designing and Drawing.
Third Term—Machine Drawing.

PRIME MOVERS AND MACHINERY—ONE YEAR.

First Term—Thermodynamics.
Second Term—Prime Movers.
Third Term—Machinery and Millwork.

Besides the above there will be required, for graduating:
Three terms of Elementary Laboratory Practice.
One term of Machine Construction in Laboratory.
One term of Strength of Materials.

EXPLANATION OF THE COURSE.

In the Principles of Mechanism are studied the parts of machinery by pairs; or, elementary combinations of mechanism. In this the form and arrangement of the parts necessary for securing the desired modification of motion is sought.

In the Machine Designing the student takes up some problem in the shape of a particular machine for a special purpose. The forms, dimensions, and arrangements of the parts are decided upon, and then a drawing is carefully made of the whole. Detail drawings to regulation size are then made, and finished in shade lines, as done in the best shops. The quality of these drawings is sufficient for the requirements of photo-engraving for illustrations upon circulars.

In Thermodynamics are studied the principles which form the groundwork of all heat engines.

In Prime Movers are studied all kinds of heat engines, such as steam, hot-air, etc., and also wind and water-wheels.

Mill-work and Machinery takes up valve-gears, fly-wheels, governors, efficiency of parts of machines, strength of parts, etc.

The Mechanical Laboratory is intended for acquainting the student with the materials used in machine construction; with the forms customary in machinery; to impart a degree of skill in the use of tools, and a knowledge of the operations and practices of shops.

The first term consists of the actual use of tools in executing a set of forms chosen, with a view to supplying the greatest possible amount of practical instruction for the time. This is combined with weekly lectures on tools and their use.

The second term carries the above practice to the fitting together of parts, and to the use of machine tools, such as the lathe, planer, etc. This is combined with weekly exercises in designing and drawing of machine elements, such as cranks, bearing boxes, stub-ends, etc.

The third term is fully occupied in fitting parts carefully together, as in the joints of machinery, and in finishing the surfaces by scraping, polishing, burnishing, etc. This is in combination with a weekly exercise in the invention of simple machines for specific operations, such as bending wire staples, cutting wooden combs, etc.

The fourth term of Mechanical Laboratory practice is constructive. It is taken in connection with the principles of mechanism. In the latter, problems in mechanism are worked out, forms and dimensions assigned to the parts, and then these are executed in the Laboratory, resulting in models of mechanical movements for the cabinet.

Projects and problems will be assigned to the pupil from time to time, requiring him to visit manufactures and report. Such reports should be neatly made out on the regulation papers of the Department. These will be taken, in part, for the examinations, and retained for the cabinet.

Text-Books and Works of Reference.—Rankin's Steam Engine, and Machinery and Millwork; Weisbach's Mechanics; Willis's Principles of Mechanism; Belanger's Cinematique; Zeuner's Traité de la Chaleur.

II. CHEMISTRY.

All students who wish to obtain a degree are required to study Chemistry for two terms. During this year General Chemistry, together with its most important applications to the arts, is taught by the use of text-books and of lectures, illustrated by an ever-growing collection of the materials used in manufactures, and by a very complete suite of experiments.

After the completion of this elementary course, those who desire to devote special attention to Chemistry enter the analytical laboratory, where they can carry on their work for two years or more.

The course in Analytical Chemistry provides full instruction in all departments of the science. In connection with the ordinary work of Qualitative Chemistry, the student is taught the use of the spectroscope, and of the blow-pipe in Determinative Mineralogy. He is also employed in making various compounds, and, if his time permits, studies exhaustively one or more of the elements and its important compounds.

The course of Quantitative Chemistry includes both the gravimetric and volumetric methods. The analyses are at first confined to those compounds whose structure is known, and afterwards extended to such bodies as the student may require in the special branch of the science to which he desires to devote himself. Opportunity is offered for the study of coals, minerals, fertilizers, soils, or of the useful and waste products in manufactures.

If the student desires, he will also be assisted in taking up in detail topics which relate to Agriculture, to Pharmacy, to Medicine, and to other sciences, or to arts in which the principles of chemistry are applied.

A summary of the course is given below :

IN THE REQUIRED COURSE.

GENERAL CHEMISTRY—TWO TERMS.

Inorganic and Organic Chemistry, and the applications of Chemistry to the Arts.

IN THE SPECIAL COURSE.

FIRST YEAR.

First Term—Qualitative Analysis: Reactions of Single Bases and Acids, Exercises in Blow-pipe and Flame Reactions.

Second Term—Qualitative Analysis continued: Determination of Mixtures, Blow-pipe Mineralogy, Preparation of Compounds.

Third Term—Quantitative Analysis, Stochiometry.

SECOND YEAR.

Quantitative Analysis: Special studies in Chemistry applied to Pharmacy, to Agriculture, to Manufactures, and to the Arts.

Text-Books.—Norton's Chemistry, Beilstein's Manual, Galloway's Qualitative Chemistry, Will's Qualitative Chemistry, Classen's Quantitative Chemistry, Fresenius's Quantitative Chemistry, Caldwell's Agricultural Chemistry.

Books of Reference.—Watt's Dictionary of Chemistry, Gmelin's Hand-Book of Chemistry, Wagner's Chemical Technology, Graham-Otto's Chemie, Rose's Analytischen Chemie, Gorup-Besanez's Physiologischen Chemie, Elderhorst's Determinative Mineralogy.

III. MINING AND METALLURGY.

The course in Mining Engineering secures to the student careful instruction, with ample allowance of time, in the three fundamental branches of the art—mining, preparation of the ore, and its metallurgical treatment. These courses will comprise lectures, the study of text-books, preparation of maps, drawings, and sections, and visits to existing works, with careful reports upon them, and practice in estimates and designs.

For Assaying, there is a full equipment of furnaces and ores for the dry assay, and the wet methods are taught in the chemical laboratory.

An ample collection of minerals is provided, comprising all species with which the mining engineer should be familiar, and to this the students have constant and familiar access.

Crystallography is taught by the aid of a complete collection of large wood models, made especially for the department, and containing every common form.

To these special pursuits the student gives two-thirds of his time during two years. The technical studies of the department are supported by courses in Chemistry, Physics, Geology and Mathematics, in Civil and Mechanical Engineering, and in the German language.

Text-Books and Books of Reference.—Dana's Mineralogy, Egleston's Crystallographic Tables, Callon's Mining, Andre Mining and Mining Machinery, Phillips's Metallurgy, Egleston's Metallurgical Tables, Rittenger's Aufbereitung, Gætzschmann's Aufbereitung, Bodemann & Kerl's Assaying, Mitchell's Assaying, Von Cotta's Ore Deposits.

MINING ENGINEERING.

FIRST YEAR.

First Term—Mining and Crystallography.
Second Term—Ore and Coal Washing, and Mineralogy.
Third Term—Theory of Veins, and Assaying.

SECOND YEAR.

First Term—Metallurgy and Machine Drawing.
Second Term—Metallurgy and Machine Drawing.
Third Term—Metallurgy and Mapping.

The Mining course is made more complete by the opportunities given for the study of Civil Engineering, and the instruction in Metallurgy is supplemented by the department of Mechanical Engineering.

IN THE REQUIRED COURSE.

MINERALOGY—ONE TERM.

Since the establishment of the Mining Department the study of Mineralogy has been added to the Preliminary Course. Instruction is given in Crystallography and Mineralogy by lectures, specimens, and models.

Text-Book.—Dana's Manual.

THE SCHOOL OF NATURAL HISTORY.

IN THE REQUIRED COURSE.

BOTANY—ONE TERM.

First Year.

First Term—Structural and Physiological Botany.
Second Term—Structural and Physiological Botany.
Third Term—Systematic Botany. (Phænogamia.)

Second Year.

First Term—Systematic Botany. (Gramineæ and Cryptogamia.)
Second Term—Economic Botany, or Botany as applied to the Arts.
Third Term—Economic Botany, as applied to Garden, Field, and Forest Culture.

Text-Books and Books of Reference.—Gray's Botanical Text-Book, Loudon's Encyclopedia of Plants, Paxton's Botanical Dictionary, Lowe's British Grasses, Berkeley's Cryptogamic Botany, Cooke's Hand-Book of British Fungi, Darlington's American Weeds and Useful Plants.

GEOLOGY AND PALEONTOLOGY.

In the required course which all regular students are obliged to complete before entering on the work of the schools, one term is given to each of the two subjects, Physical Geography and Elementary Geology.

For further study in this department, a knowledge of the elements of Chemistry and Physics is necessary. It is, therefore, required that students shall complete the study of these subjects in the required course before entering upon advanced work in Geology.

FIRST YEAR.

First Term—Lithological and Historical Geology, including the Elements of Paleontology.

Second Term—Geology of Ohio.

Third Term—Historical Geology and Paleontology.

SECOND YEAR.

First Term—Economical Geology: Building-stones, Limes, and Cements.

Second Term—Economical Geology continued: Fire-clays, Petroleum, and Salt.

Third Term—Relations of Geology to Soils and Water Supply.

An alternative course for the second year is provided, as follows:

First Term—Paleontology: Lower Silurian formations.

Second Term—Paleontology: Upper Silurian and Devonian formations.

Third Term—Paleontology: Sub-Carboniferous and Coal Measure formations.

Instruction in this department is given by lectures, text-books, and field practice.

The subject of Lithological Geology is taken up in lectures. The student is taught to recognize, promptly and certainly, at least twenty species of the minerals most commonly met with, and also ten to fifteen of the rock formations that are most abundant. The chemical composition of minerals and rocks is discussed, and such of the students as are working in the chemical laboratory are expected to make qualitative and, if possible, quantitative analyses of some of the specimens which they meet with in their geological study.

Stratigraphical Geology is taught by field practice and lectures. The student is made thoroughly acquainted with the various rock exposures that are readily accessible from Columbus, and is taught how to recognize in the field, and how to represent in sections and upon maps, the various facts with which he meets.

The orderly series of Ohio formations gives but little opportunity to observe and determine the "dip" of strata, and none to investigate the phenomena of "faults," which make so important an element in geological work generally. These subjects, therefore, are treated of in lectures.

The Geology of Ohio is also taught in lectures. The museum of the College contains every thing necessary to make the student familiar with our geological scale in all its essential elements.

In Historical Geology generally, Dana's Manual is used as a text-book, the recitations in it being interspersed with lectures whenever particular subjects seem to require fuller treatment than the text-book furnishes. In Paleontology enough is done to enable the student to determine the general geological horizon of any field. The characteristic fossils of the various periods are studied until they have become easily recognizable.

Text-Books and Works of Reference.—Dana's Manual of Geology, Jukes' Manual of Geology, Lyell's Student's Elements of Geology, Lyell's Principles of Geology (11th edition), Nicholson's Manual of Paleontology, Geological Reports of Ohio and other States, Bischof's Chemical Geology.

ZOOLOGY AND COMPARATIVE ANATOMY.

Two courses of study are offered in this department—one in Zoölogy, and one in Anatomy and Physiology.

ZOOLOGY.

FIRST YEAR.

First Term—Mammals.
Second Term—Birds, Reptiles.
Third Term—Amphibia, Fishes.

SECOND YEAR.

First Term—Arthropods, Mollusks.
Second Term—Echinoderms, Worms.
Third Terms—Cœlenterata, Polystomata, Protozoa.

The first year of this course is devoted entirely to the Vertebrates, their Anatomy, Classification, Distribution, etc. The first term of the second year is given largely to the study of the structure and life-history of Insects; the second term is in great part spent upon the Parasitic Worms—a group of organisms of great interest, both scientifically and practically. The work of this year is performed chiefly in the Laboratory.

No special text-book is used. The following are some of the books of reference accessible to the student: Owens' Anatomy of Invertebrates, Huxley's Anatomy of Invertebrates, McCalister's Invertebrate Morphology, Siebold's Anatomy of Invertebrates, Rolleston's Forms of Animal Life, Packard's Guide to the Study of Insects, Dana's Crustacea, Cobbold's Entozoa, Woodward's Mollusca, Dana's Zoöphyta, Pritchard's Infusoria, Wallace's Geographical Distribution of Animals.

COMPARATIVE ANATOMY AND PHYSIOLOGY.

FIRST YEAR.

First Term—Anatomy, Human and Comparative.
Second Term—Anatomy, Human and Comparative.
Third Term—Microscopy and Histology.

SECOND YEAR.

First Term—Physiology: Recitations.
Second Term—Physiology: Recitations.
Third Term—Physiology: Recitations.

This course, while intended for general students also, is especially adapted to the wants of young men who look towards the profession of medicine and surgery, either Human or Veterinary. The work of the first two terms of the first year is largely performed in the dissecting room, and in the study of the admirable models of the human body, made by Auzoux, of Paris. Mivart's Anatomy is used as a text-book. The third term is spent in the Laboratory, over the microscope. Shäffer's practical Histology is used as a hand-book. The second year is spent in the study of Foster's Text-book of Physiology. It is to be hoped that before long a part of this year may be spent in Laboratory work.

The following, amongst other, are books accessible to the student: Owen's Anatomy of Vertebrates, Huxley's Anatomy of Vertebrates, Cuvier's Anatomie Compareé, Flower's Osteology, Parker's Monograph of the Shoulder-Girdle, Parker on the Skull, Cuvier's At-

las of Myology, Milne-Edwards's, Flint's, Carpenter's, and Küss's Physiology, Stricker's, Frey's, Beale's, Kolliker's, and Rutherford's Histology, Foster's Practical Physiology, Foster, Klein, and Brunton's Hand-Book for the Physiological Laboratory.

The department is also open to special students who desire to pay particular attention to any one subject, for the study of which they are prepared. Students who desire to acquire a thorough knowledge of the anatomy of the domestic animals, will have the use of the dissecting room, which will be kept supplied with material. Chauveau's Anatomy of the Domestic Animals is used as a manual. Special facilities are afforded young men who desire to read Human Anatomy before entering upon the work of the dissecting-room in the Medical School. Gray's Anatomy is used as a text-book.

One term in Human Physiology and one in Zoölogy are included in the Regular Course.

AGRICULTURE.

FIRST YEAR.

First Term—Soils are made a subject of examination, their geologic relations and origin are explained, their composition is shown, and how it is determined; the special adaptations of soils to particular crops and modes of culture is shown, and how to increase or restore exhausted fertility; the management of pastures and meadows; the character and value of the different grasses, clovers, and other forage plants; the culture of field crops, such as corn, wheat, oats, barley, rye, potatoes, etc.; also, the value and application of animal manures, marl, gypsum, wood-ashes, lime, superphosphate, guano, and city sewage.

Second Term—Work of the farm and improvements, plowing, harrowing, rolling, drilling, sowing, planting; Drainage, stone-drains, tile-drains, mole-drains, leveling-instruments, draining-tools, and the manufacture of drain-tiles; Irrigation, its value and methods; Farm Roads, and how to make them; Fences, material, construction, and costs; Rural Architecture, applied to the erection of farm-houses, barns, stables, etc.; Farm Machinery, plows, harrows, cultivators, rollers, drills, mowers, reapers, thrashers, pumps, wind-mills, etc.

Third Term—Orchards and Fruit trees; Vineyards and their management; Gardening for profit, ornamental and landscape gardening; Hedges, planting and trimming, and cost compared with other fences; Forestry, the value of timber, preservation of timber, and tree planting.

SECOND YEAR.

First Term—The natural history, description, and adaptation of the various domestic animals—horse-training, cattle-feeding, dairy management, wool-growing, etc.

Second Term—Veterinary Medicine, General Principles, Causes, Symptoms, Elements of Disease; Classification of Diseases; Principles of Treatment, and Remedial Agents.

Third Term—Particular Diseases and Operations. These are carefully studied, and, so far as opportunity can be obtained, diseases are treated, and operations made, under the inspection of the class.

ENGLISH AND MODERN LANGUAGES.

ENGLISH.

It is now past dispute, that the thorough understanding of the language and literature of the present, requires knowledge of the language and literature of England, in its various periods, beginning with the very beginning—Anglo-Saxon. The following course is, accordingly, a progressive, historical course. The readings of the first year extend through the Shaksperean period, the last *formative* period alike for English

speech and English literary forms. Parallel with these text-readings (in which the classics selected are treated precisely as Latin and Greek texts are treated), are lectures historical and critical upon the literature. Rough notes are taken in the class-room; these are afterwards elaborated; and recitations upon them are made as if from a text-book.

Rhetoric and logic come in the second year—rhetoric as an aid to original writing, as well as just criticism and enjoyment of others' productions; and logic, primarily, as the indispensable foundation and ever-present, though often hidden, factor in all good writing; secondly, for its bearing upon the several sciences and sorts of research taught in the College; thirdly, as an introduction to philosophical reading; fourthly, as a mental discipline, than which there is none better.

Along with this, go lectures upon more recent literature.

FIRST YEAR.

First Term—Anglo-Saxon: Sweet's Anglo-Saxon Reader; Lectures on the Literature of the Anglo-Saxon Period.

Second Term—Anglo-Saxon continued; Early English: Sweet's Vision of Piers Plowman; Lectures on Early English Literature.

Third Term—Later English: Shakspere—Select Plays; Lectures.

SECOND YEAR.

First Term—Rhetoric: Hepburn's Manual, with Exercises; Lectures on English Literature.

Second Term—Rhetoric finished; Logic: Jevon's Elements, with Lectures.

Third Term—Logic finished; Lectures on Contemporary Literature.

Books Recommended for Reference.—Marsh: Lectures on Origin, and History of English Language; Lectures on English Language and Literature; Taine's, and Craik's Histories of English Literature; Morris: English Accidence; Grein: Angelsächsische Bibilothek; Earl: Philosophy of the English Tongue.

GERMAN AND FRENCH.

In view of the fact that mental training is a chief aim of every part of a college course; that, for purposes of literary culture, the main thing a college can give is the easy reading and accurate understanding of the masterpieces of the language studied; and that in an institution in which the sciences are so prominent as they are with us, it is of the utmost importance that the ability to use foreign text-books and works of reference be acquired as soon as possible, the so-called "Conversational Method" is not employed, and "learning to speak" French and German is an incident rather than an aim of the course. This is of purpose, and according to the best college usage and authority. I believe, too, that the careful and continuous use of the grammar, lexicon, and well-chosen text is the only sure and usually the shortest road to accurate and fluent speech. Where small classes, with little else to do, can spend several hours each day with the teacher, a different method will often succeed; but in a college, and to meet the ends of a college, more and better results are secured by the grammatical and literary method. Give the student an accurate knowledge of the inflections and syntax of a foreign language; make him master of a full and idiomatic vocabulary of its words; let the reading of varied and well selected texts teach him the peculiarities alike of the thought and rhythm of the speech of the men whose works he studies; accustom him to the oral and written rendering of the foreign text into English, and of English texts

into foreign, and he will be no longer helpless in presence of a foreign poem or book on chemistry, and learning to speak, and speak well, will be easily acquired, and, when acquired, remembered.

In both the French and German course the student attends mainly to grammatical doctrine, and word for word versions and exercises at first, and to the literary characteristics and contents of what he reads as he progresses. In the second year courses of lectures upon the respective literatures are delivered.

GERMAN.

FIRST YEAR.

First and Second Terms—Whitney's Grammar and Reader.

Third Term—Schiller: Der Neffe als Onkel; Exercises in Composition.

SECOND YEAR.

First Term—Goethe's Egmont; Lessing: Nathan der Weise; Lectures on Early German Literature.

Second Term—Lessing: Nathan der Weise finished; Richter: Quintus Fixlein; Lectures on Literature.

Third Term—Richter: Quintus Fixlein finished; Lectures.

Books of Reference.—Vilmar: Deutsche Literatur-geschichte; Wackenagel: Geschichte der Deutschen Literatur; Simrock; Niebelungen-Lied, in Modern German: Grimm: Deutsche Mythologie; Gostwick and Harrison: Outlines of History of German Literature.

FRENCH.

FIRST YEAR.

First Term—Duffet: French Grammar and Exercises.

Second Term—Grammar continued; Masson's French Classics, vol. 5.

Third Term—French Classics continued.

SECOND YEAR.

First Term—Moliere: Les Fourberies de Scapin; Racine: Athalie.

Second Term—Corneille: Cinna; Racine: Andromaque; Bridge's History of French Literature.

Third Term—Feuillet: Le Roman dûn jeune homme pavre; Bridge's History continued.

Books of Reference.—Brachet: Grammaire Historique; Chevallet: L'Histoire de la langue Francaise; Vinet: L'Historie de la literature, du xviiime Siecle; Parton: The French Parnassus; Van Laun: History of French Literature.

LATIN LANGUAGE.

The course in Latin embraces two years of elementary work, and two years of regular college work. The elementary course is designed mainly for beginners, and those who have suffered from the lack of regular training, and thus cannot compete successfully in the advanced course with those who have been systematically taught in high schools. It is arranged as follows:

ELEMENTARY LATIN.

FIRST YEAR.

First Term—Leighton's Latin Lessons.
Second Term—Leighton's Latin Lessons completed; Cæsar's Commentaries, Book I.
Third Term—Cæsar's Commentaries, Books II and III.

SECOND YEAR.

First Term—Virgil's *Æneid*, Books I, II, and III.
Second Term—Virgil's *Æneid*, Book IV; Cicero *In Catilinam* I, II.
Third Term—Cicero *In Catilinam* III, IV; *Pro Archia Poeta.*

Allen and Greenough's Latin Prose Composition is used throughout the year, in weekly exercises, and Allen and Greenough's Latin Grammar is used through the entire course.

ADVANCED COURSE.

FIRST YEAR.

First Term—Livy, Selections; History of Rome.
Second Term—Cicero: *De Senectute; De Amicitia.*
Third Term—Horace, *Odes.*

During the year lectures are given on Roman History and Antiquities, and the reading of the authors is accompanied with exercises in Latin prose composition (weekly) and in written translation.

SECOND YEAR.

First Term—Horace, *Satires, Epistles,* and *Ars Poetica.*
Second Term—Tacitus, *Agricola* and *Germania.*
Third Term—Terence, *Andria* and *Adelphæ;* Quintilian, *Institutio Oratoria.*

Lectures are given during the year on Latin Literature and Philology.

Admission.—Candidates for the first-year class will be examined as follows: In Latin Grammar (Allen and Greenough's is preferred); writing Latin; three books of Cæsar's *Commentaries;* five orations of Cicero; and four books of Virgil's *Æneid.*

GREEK LANGUAGE.

The course in Greek includes one elementary and two college years; and is arranged as follows:

ELEMENTARY GREEK.

First Term—Leighton's Greek Lessons.
Second Term—Greek Lessons completed: Book I of Xenophon's *Anabasis.*
Third Term—*Anabasis:* Books II and III.

ADVANCED COURSE.

FIRST YEAR.

First Term—Xenophon, *Memorabilia;* Plato, *Phædo.*
Second Term—Herodotus, Selections; History of Greece.
Third Term—Euripides, *Alcestis.*

Lectures are given during the year on Greek History, Antiquities, and the Drama.

SECOND YEAR.

First Term—Homer, *Odyssey.*
Second Term—Sophocles, *Œdipus Tyrannus.*
Third Term—Demosthenes, *Olynthiacs and Philippics.*

Lectures are given during the year on Greek Literature and Philology. Exercises in Greek prose composition (weekly) and in written translation constitute an important feature of the course.

Admission.—Candidates for the first-year class will be examined as follows: In Greek Grammar (Goodwin's is preferred); in writing Greek, with the accents; and the first one hundred and eleven pages of Goodwin's Greek Reader (or three books of Xenophon's *Anabasis.*)

PROVISIONS FOR SPECIAL STUDENTS.

To students entering the University for the purpose of taking some special study, and who do not propose to complete a regular course, *full freedom in the selection of the branches which they will pursue is granted, subject only to the necessary limitation that they are prepared to take up with advantage the studies which they select.* They will enter the classes organized for the regular courses, and they can not be allowed to impair the quality of work done in the classes through their own inadequate preparation. Advanced students will find every facility for special work.

SPECIAL COURSE IN AGRICULTURE.

The University recognizes its obligations—imposed in the terms of the grant to which it owes its existence—to the great industrial interest of Agriculture. This obligation it has aimed to meet in the establishment of departments for thorough training in those branches of science upon which agriculture depends, *and also in fixing its standard of admission so that students may enter its classes from the common schools.*

To the question, what education it proposes to furnish to the farmer, it may be answered, that such a course as would secure the degree of Bachelor of Science from the University could be made to include all of the branches which in reality constitute agriculture, and, as far as theoretical instruction goes, could scarcely be improved in its adaptations to the necessities of the American farmer.

But this course requires for its completion six years from the common school, and there is good ground to fear that a young man who has been withdrawn for six years from the farm will scarcely return to it again. For the training, then, of the most of those who intend to devote themselves to practical agriculture, a scheme requiring less time must be found. In accordance with this view, a three years' course has been established, which offers to the young farmer a practical and serviceable range of study. This course is shown in the appended schedule:

FIRST YEAR.

First Term—Human Physiology, English Language, Algebra.
Second Term—Physical Geography, Zoölogy, Algebra.
Third Term—Botany, United States History, Geometry.

SECOND YEAR.

First Term—Physics, Chemistry, Geology.
Second Term—Physics, Chemistry, Geometry.
Third Term—General History, Mineralogy, Plane Trigonometry.

THIRD YEAR.

First Term—Zoölogy, Agricultural Chemistry, Practical Agriculture.
Second Term—Diseases of Animals, their Medical and Surgical Treatment; Agricultural Chemistry, Practical Agriculture.
Third Term—Diseases of Animals, their Medical and Surgical Treatment; Practical Agriculture; Surveying.

It will be observed that this scheme agrees for two years with the prescribed course already given, while the third year supplements that course in as practical a manner as possible, and adapts it to the demands of this particular calling. In the strictly agricultural part of the course, practice will be constantly combined with theory, and the student will thus retain familiarity with the life from which he has come, and to which he expects to return.

TRAINING FOR TEACHERS AND STUDENTS IN MEDICINE.

The advantages offered by the University in the training required for two callings, in particular, are so great that special attention is invited to them. To students fitting themselves to become teachers of Natural Science, and also to those designing to pursue the study of Medicine, courses of study could not be more perfectly adapted, if they were designed expressly for such service. The resources of the University in the way of collections, and the methods of study adopted in the more advanced classes—the work being mainly done in laboratories and museums—make it safe to say that a very important addition to the educational facilities of the State is here made.

All students are required to take three daily recitations or their equivalent in laboratory work.

Certificates will be furnished to those who complete either the work of the Agricultural course, or of any special department.

LITERARY SOCIETIES

There are two Literary Societies in the University, the *Alcyone* and the *Horton*. Both are provided with rooms in the University building, the equipment of the Alcyone hall having been mainly furnished through the generosity of the late John G. Deshler, of Columbus. The Societies are vigorous and effective, and furnish to the student a very desirable training in public speaking and parliamentary order.

ADMISSION.

For admission to the University, students must possess a competent knowledge of the branches taught in the common schools, viz., Reading, Orthography, Writing, Grammar, Geography, Arithmetic, and of Algebra through simple equations.

The attention of those proposing to enter the University is especially directed to the terms above given. A competent knowledge of the common school branches is required. The University does not undertake to do the work which the common schools are able and willing to do, viz., that of grounding the student in the elements of an English education. He must bring with him a fair measure of the training which these schools are prepared to give. If it be asked what is a competent knowledge of these branches, it may be answered that the candidate should certainly have knowledge enough of them to entitle him to a teacher's certificate from a county board of examiners.

Advanced standing will be granted to students upon their sustaining examination in any part of the course, prescribed or elective.

Graduates of the high schools of the State, and persons holding teachers' certificates of the eighteen months' grade, are admitted without examination.

It is, however, to be borne in mind that the amount of work done in several branches of science in the required course of the University, and the quality of work done in all, by reason of the superior facilities provided, render these studies quite different from those that are known by the same name in the schools of the State. Boih Physics and Chemistry, for instance, occupy two terms of daily recitations, and with Botany, Physiology, and Zoölogy are able to avail themselves of all the resources of their respective departments. All students, therefore, are earnestly advised on entering the University to shape their work by the required course; in other words, to adopt this course as far as possible. Their studies are thus made consecutive, and a degree of symmetry is given to their education, so far as it is completed here. It is expected that many students will be able to enter the second year of this course.

Students entering from other colleges will be required to bring certificate of honorable dismission.

LIST OF QUESTIONS FOR ENTRANCE EXAMINATIONS, 1878.

GRAMMAR.

1. Give an account of the time you have spent, the text-books you have used, and the advantages you have gained in studying English Grammar? Sign your name in full, with age, and post-office address.
2. Write short sentences containing pronouns of each kind, and parse in full the pronouns given.
3. Write a sentence having a clause for a subject.
4. Name and define the properties of verbs.
5. Under what heads is Grammar usually treated? Define each.
6. Write sentences containing the possessive case of James; the possessive plural of lady.
7. Parse the verbs in the sentence, "Let justice be done though the heavens fall."
8. Define the several kinds of sentences, and give an example of each.
9. Parse first three words in sentence, "Teach me what is true."
10. Analyze sentence given above.

GEOGRAPHY.

1. Name the States bordering on the Gulf of Mexico.
2. What mountains between France and Spain?
3. How many counties in Ohio? Bound one.
4. Locate the Bahama Islands.
5. Do degrees of latitude vary in length? If so, why?
6. Which of the grand divisions has the most sea coast in proportion to its area, and how is it benefited thereby?
7. Define mathematical, physical, and political geography.
8. How far from the North pole is the Arctic Circle, and why placed there?
9. Name and locate the three largest rivers of North America.
10. What changes were made in the map of Europe by the treaty of Berlin?

ARITHMETIC.

1. What is the least common multiple of 48, 98, 21, and 27?
2. Divide 7-8 of 16-19 by 4-11 of 33-29.
3. Reduce $\frac{18\ 2\text{-}7}{2\text{-}3 \text{ of } 3\text{-}5 \text{ of } 5\text{-}7}$ to its simplest form.
4. How many yards of carpet which is three-fourths of a yard wide does it require to cover a floor 17 feet long and 16 feet 6 inches wide?
5. Reduce .445 of an acre to rods, feet, and inches.
6. Find the square of 0.9. Write result in words.
7. Find the square root of 0.9. to one figure.
8. How long must $250 be at simple interest, at 6 per cent., to make the amount $300
9. A horse is sold for $160, which is 20 per cent. less than cost. Required the cost.
10. If 6 men can build 20 feet of stone wall in 10 days, how many men can build 360 feet of the same wall in 90 days?

ALGEBRA.

1. Reduce to simplest form $a+b-(2a-3b)-(5a+7b)-(-13a+2b)$.
2. Multiply x^2-xy+y^2 by x^2-xy+y^2.
3. Divide x^4-y^4 by $x-y$.
4. From $4a^2x-(2abc-4bc+8d)$ subtract $(4a^2x-2d)+abc$.
5. Resolve into factors (x^3-y^3).
6. Give formula for finding square of sum of two quantities—difference.
7. Reduce to one fraction $\frac{a}{a+1}+\frac{2}{a-2}$.
8. Out of a cask of wine from which one-third part had leaked, 21 gallons were afterward drawn, and the cask was then half full. Required its capacity.
9. What is the value of x in the equation $\frac{x}{a}-\frac{a}{a+b}=\frac{x}{a-b}$?
10. Explain *transposition*.

EXPENSES.

A charge of $5.00 a term, or $15.00 a year, is made against all students, under the head of incidental expenses. *There is no charge for tuition in any department of the University;* but advanced students in Chemistry and Physics are required to pay fees to cover, in part, the cost of materials consumed, and the deterioration of the expensive instruments employed. The fee in the Chemical laboratory is $10.00 per term, and in the Physical laboratory $7.00 per term.

Two dormitories have been provided, in one of which board and furnished rooms can be obtained, at a charge of $3.50 per week, two students occupying one room. If the student furnishes and takes care of his own room, he obtains board for $3.00 per week.

Board bills must be paid monthly in advance.

The second dormitory contains ten rooms, and is designed for students wishing to board themselves. The rooms which are designed for two occupants are provided with stoves that can be used in cooking.

A deposit of $5.00 is required at the beginning of every term from all students occupying rooms in the second dormitory, as a guarantee against willful injury to rooms or halls. For damages that cannot be traced to the individuals committing them, an assessment will be made upon the guarantee fund. In case no assessment is made, the deposit will be returned at the end of the term.

By the action of the Board of Trustees, all dues must be paid in advance, at the beginning of each term. Term bills receipted by the University Treasurer must be handed in to the President, before the student's name can be entered on the class-rolls of the University.

The University is connected with the central portions of the city by

two street railroads. Board, with furnished rooms, can be obtained in private families within convenient distance of the University at rates varying from $4.00 to $5.00.

Boarding clubs are in successful operation, in which good board can be had for $2.25 per week.

It is the policy of the institution to give as much of the farm-work as possible to students who desire thereby to meet their expenses in part, *but the University is not able to guarantee work to any.* In the assigning of work to applicants, preference will be given to students in the department of Agriculture.

SUMMARY.

The expenses of a term of twelve weeks will include the following items:

Incidentals	$5 00
Board in dormitory	42 00
Washing, lights, etc	10 00
Total	$57 00

Students boarding themselves reduce this aggregate by at least $20.00.

CALENDAR.

The Winter term commences on Thursday, January 2, 1879, and continues twelve weeks, closing on Wednesday, March 26.

The Spring term commences on Thursday, April 3, and continues eleven weeks, closing on Wednesday, June 18 (Commencement Day.)

The Fall term commences on Thursday, September 18, and continues fourteen weeks, closing on Wednesday, December 24.

For further information, address the President or any member of the Faculty, or the Secretary of the Board of Trustees.

CATALOGUE OF STUDENTS.

NAME.	RESIDENCE.	COUNTY.
GRADUATE IN ARTS.		
McFadden, John F	Cadiz	Harrison.
GRADUATES IN SCIENCE.		
Dietrich, Charles H	Defiance	Defiance.
Dun, Walter A	London	Madison.
Howald, Ferdinand	Columbus	Franklin.
Howard, Curtis C	Columbus	Franklin.
Townshend, Arthur B	Avon	Lorain.
CLASS OF 1879.		
Humphrey, J. Scott	Findlay	Hancock.
McMackin, Amasa B	Newcomerstown	Tuscarawas.
Morrison, Mary Frank	Columbus	Franklin.
Noble, Warren F	Tiffin	Seneca.
Snyder, Henry, Jr	Springfield	Clarke.
Towne, Robert S	Portsmouth	Scioto.
CLASS OF 1880.		
Corwin, Edwin E	Columbus	Franklin
Cunningham, Arthur	Columbus	Franklin.
Jones, J. Paul	Hilliard	Franklin.
McCormick, John H	Columbus	Franklin.
Nutting, Myron E	Kent	Portage.
Short, Sidney H	Columbus	Franklin.
Smith, Florizel	Lithopolis	Fairfield.
Townshend, Alice M	Avon	Lorain.
Ward, John C	Willoughby	Lake.
CLASS OF 1881.		
Bennett, Edwin M., Jr	Urbana	Champaign.
Burt, William F	Newcomerstown	Tuscarawas.
Gregory, Hiram D	Portsmouth	Scioto.
Hyatt, Edward	Augusta	Carroll.
Keffer, Mary	Cleveland	Cuyahoga.
McClung, William E	Columbus	Franklin.
Palmer Charles O	Cleveland	Cuyahoga.
Seeley, Uri, Jr	Austinburg	Ashtabula.
Spielman, John A	Tiffin	Seneca.
West, James Park	St. Clairsville	Belmont.
CLASS OF 1882.		
Bixler, Samuel J	Brookville	Montgomery.
Brown, Christopher N	Ironton	Lawrence.
Cherryholmes, William K	Millersburg	Holmes.
Dahl, Harry B	Washington	Fayette.
Fassig, Oliver S	Columbus	Franklin.
Hyatt, Harry	Augusta	Carroll.
Keffer, Frederic	Cleveland	Cuyahoga.
Kelly, Thomas	McArthur	Vinton.
Langfitt, William C	Millersburg	Holmes.
Lewis, Harry J	West Lafayette	Coshocton.

CLASS OF 1882—Continued.

NAME.	RESIDENCE.	COUNTY.
Makepeace, George D	Cleveland	Cuyahoga.
McCoy, Homer W	South Point	Lawrence.
Moore, Harry C	Columbus	Franklin.
Safford, Vinton P	Chillicothe	Ross.
Smith, William P	Chillicothe	Ross.
Waddell, Frederick J	Racine	Meigs.
Wikoff, John B	Columbus	Franklin.
Williams, Harley	Columbus	Franklin.

SECOND YEAR—PRELIMINARY COURSE.

Ackerman, Eli O	Columbus	Franklin.
Ackerman, Fremont	Columbus	Franklin.
Anderson, George Y	Columbus	Franklin.
Baker, William V	Columbus	Franklin.
Bradford, Joseph N	Columbus	Franklin.
Brown, William G	West Manchester	Preble.
Crisler, A. Milton	West Manchester	Preble.
Davis, Floyd	Ithaca, N. Y	
Donham, William W	Lindale	Clermont.
Dun, George W	Dublin	Franklin.
Dun, John	Dublin	Franklin.
Edwards, Frank	Bloomingburg	Fayette.
Elliott, Leigh H	Bloomingburg	Fayette.
Ely, William Arthur	Elyria	Lorain.
Fisher, Dudley T	Columbus	Franklin.
Foster, Jesse K	Brookville	Montgomery.
Fuller, Willard	Cleveland	Cuyahoga.
Fullington, Charles P	Irwin	Union.
Galbraith, John H	Columbus	Franklin.
Goldfrederick, Adolph	Circleville	Pickaway.
Hay, John H	Coshocton	Coshocton.
Hinman, Charles D	Columbus	Franklin.
Hochstetler, Charles E	Nebraska City, Neb	
Hubbard, Frank W	Columbus	Franklin.
Hughes, John W	Columbus	Franklin.
Hutchinson, Harry B	Columbus	Franklin.
Innis, Adam G	Columbus	Franklin.
Jewett, George F	West Canaan	Madison.
Knopf, George W	Columbus	Franklin.
Lovejoy, Jesse R	Columbus	Franklin.
Leonhard, Louis Charles	Dayton	Montgomery.
McDonald, Edgar M	Coshocton	Coshocton.
Milligan, James P	Rushville	Fairfield.
Mills, Augustus C	West Alexandria	Preble.
Orton, Edward, Jr	Columbus	Franklin.
Pheneger, Parker W	Columbus	Franklin.
Rohrer, Albert L	Farmersville	Montgomery.
Smith, Guy	Elyria	Lorain.
Vanderburg, Charles R	Columbus	Franklin.
Van Harlingen, Edward M	Columbus	Franklin.
Wirth, Herman	Columbus	Franklin.

FIRST YEAR—PRELIMINARY COURSE.

Ackerman, Monroe F	Columbus	Franklin.
Anderson, James T	Columbus	Franklin.
Atwater, Arthur S	Cleveland	Cuyahoga.
Bancroft, Walter H	Columbus	Franklin.
Bingham, Edward	Columbus	Franklin.
Beverly, Frank Hamilton	Columbus	Franklin.
Bradford, Samuel	Columbus	Franklin.

FIRST YEAR—PRELIMINARY COURSE—Continued.

NAME.	RESIDENCE.	COUNTY.
Brooks, Wilson	Columbus	Franklin.
Broucher, Marcus	Columbus	Franklin.
Brown, Charles W	Columbus	Franklin.
Carey, Samuel	Mt. Vernon	Knox.
Collins, Thomas K	Barnesville	Belmont.
Colvin, Darwin H	Columbus	Franklin.
Comstock, Charles B	Columbus	Franklin.
Cooke, Paul	Chillicothe	Ross.
Cornell, William B	Columbus	Franklin.
Coulter, Guy	Columbus	Franklin.
Crane, D. W	Mainesville	Warren.
Crawford, Robert A	Columbus	Franklin.
Creighton, William F	Malvern	Carroll.
Cunningham, Andrew	Columbus	Franklin.
Curtis, Helen G	Little Hocking	Washington.
Daymude, James A	Marble Cliff	Franklin.
Deterly, Frank C	Columbus	Franklin.
Doe, Charles A	Columbus	Franklin.
Dyer, David N	Galena	Delaware.
Ensey, Grace	Columbus	Franklin.
Fischer, Edward	Columbus	Franklin.
Fox, Herman S	Brookville	Montgomery.
Francisco, Bond	Columbus	Franklin.
Freeman, Charles	Columbus	Franklin.
Garrison, Richard F	Salem, N. J	
Garvin, Harry B	Columbus	Franklin.
Gemunder, Albert C	Columbus	Franklin.
Haerlin, Herman	Cincinnati	Hamilton.
Haines, Jettie	Oneida	Carroll.
Halm, William L	Columbus	Franklin.
Hamilton, Charles S	Columbus	Franklin.
Hawkins, James O	McArthur	Vinton.
Hayes, Alvin C	Burgh-Hill	Trumbull.
Hine, Louis A	Milan	Erie.
House, William D	Columbus	Franklin.
Housel William M	Middle Branch	Stark.
Houston, William Alexander	Marysville	Union.
Howald, Henry J	Columbus	Franklin.
Hull, Alice G	Columbus	Franklin.
Hull, Harry C	Millersburg	Holmes.
Huffman, Jacob A	Columbus	Franklin.
Kenney, Melvin P	Isle St. George	Ottawa.
Kenny, Minerva	Columbus	Franklin.
Kienzle, Frank	Columbus	Franklin.
Lakin, Milton C	Marble Cliff	Franklin.
Lamb, Elizabeth	Columbus	Franklin.
Law, George F	Willoughby	Lake.
Linton, Robert	Columbus	Franklin.
Longman, Lillie A	Columbus	Franklin.
Markley, J. Frank	Sulphur Springs	Crawford.
Marvin, Eva	Columbus	Franklin.
McGill, Charles	Columbus	Franklin.
Miner, Louis	Columbus	Franklin.
Miskimen, Geo. W. Jr	Newcomerstown	Tuscarawas.
Mix, Melvin N	Avenue	Franklin.
Monypeny, William, Jr	Columbus	Franklin.
Mosher, George E	Chillicothe	Ross.
Mullins, William James	Allegheny, Pa	
Oberlin, Michael W	Middle Branch	Stark.
Orr, Charles	Columbus	Franklin.
Parker, William B	Columbus	Franklin.
Pence, Smith M	Urbana	Champaign.

FIRST YEAR—PRELIMINARY COURSE—Continued.

NAME.	RESIDENCE.	COUNTY.
Peters, William L	Columbus	Franklin.
Pleukharp, Charles	Columbus	Franklin.
Poland, August A	Columbus	Franklin.
Rohr, Etta F	Canal Winchester	Franklin.
Sabine, Annie Ware	Richwood	Union.
Sawyier, D. W. C., Jr	Columbus	Franklin.
Schwenker, John	Columbus	Franklin.
Scurry, James R	Columbus	Franklin.
Shedd, Earl E., Jr	Columbus	Franklin.
Sheehan, Charles	Columbus	Franklin.
Sinks, Clinton P	Columbus	Franklin.
Spielman, David W	Tiffin	Seneca.
Stimmel, Turner	Columbus	Franklin.
Thompson, John G., Jr	Columbus	Franklin.
Upson, Joseph F	Tallmadge	Summit.
Wade, William M	Columbus	Franklin.
Whitehurst, George A	Canal Winchester	Franklin.
Whitten, William	Columbus	Franklin.
Wikoff, James E	Columbus	Franklin.
Wilcox, James B	Columbus	Franklin.
Wilgus, Lewis F	Conover	Miami.
Willard, Charles P	Point Pleasant, W. Va	
Wright, Charles H	Athens	Athens.

UNCLASSIFIED STUDENTS.

Anderson, Newton M	Columbus	Franklin.
Baily, George S	Waynesville	Warren.
Baird, Lida M	Columbus	Franklin.
Baker, Chauncey B	Thornville	Perry.
Baker, Duey H	Columbus	Franklin.
Baker, Harry E	Thornville	Perry.
Barcus, Flora	Columbus	Franklin.
Barcus, Harry	Columbus	Franklin.
Beebe, Stacey B	Coshocton	Coshocton.
Bennett, Charles M	Urbana	Champaign.
Bohrer, James M	Baltimore	Fairfield.
Britton, Jennie	Monroe	Butler.
Brossman, Charles E	Lithopolis	Fairfield.
Brotherton, William	Cedarville	Greene.
Bryan, Ormond M	London	Madison.
Burns, William	Coshocton	Coshocton.
Butler, Albert C	Columbus	Franklin.
Clark, Elmer E	Orrville	Wayne.
Coman, Charles	Hanover	Licking.
Conley, Alice M	Shelby Iron Works, Ala	
Davis, Lucy J	Dublin	Franklin.
Deuel, George C	Urbana	Champaign.
Doney, S. Darlington	Columbus	Franklin.
Downerd, Edward C	Zanesville	Muskingum.
Dun, Charles B	London	Madison.
Ewing, Kittie	Columbus	Franklin.
Falconer, Cyrus, Jr	Gore	Hocking.
Fay, F. Willis	Columbus	Franklin.
Felch, Will Farrand	Columbus	Franklin.
Field, Flora	Columbus	Franklin.
Field, Sarah J	Columbus	Franklin.
Fitch, Eliza D	Columbus	Franklin.
Galbreath, John W	Neville	Clermont.
Gibson, Agnes E	Elyria	Lorain.
Gibson, Mary E	Elyria	Lorain.
Gill, Allis B	Columbus	Franklin.

UNCLASSIFIED STUDENTS—Continued.

NAME.	RESIDENCE.	COUNTY.
Gill, Maggie H	Hilliard	Franklin.
Glover, Sioux	Hilliard	Franklin.
Graham, Dora	Clarksburg	Ross.
Graham, Rebecca	Clarksburg	Ross.
Greene, Harry N	Atwater	Portage.
Griffin, Theodore L	Columbus	Franklin.
Hall, Calvin C	Crestline	Crawford.
Harsh, Nannie	Oneida	Carroll.
Hershey, Benjamin F	Union	Montgomery.
Hine, Adaline	Milan	Erie.
Hinman, Ella J	Columbus	Franklin.
Houston, Margaret E	Cannonsburg, Pa	
Hughes, Frank L	Columbus	Franklin.
Hutchinson, Mary	Columbus	Franklin.
Hubbard, Herman M	Columbus	Franklin.
Innis, Isabella C	Columbus	Franklin.
Innis, Louvina C	Columbus	Franklin.
Innis, Maxwell P	Columbus	Franklin.
Innis, Sarah G	Columbus	Franklin.
Kellerman, Charles C	Cedar Hill	Fairfield.
King, David P	Medina	Medina.
Koehler, Nicholas	Hilliard	Franklin.
Lane, Louis	Mt. Vernon	Knox.
Lee, Edwin S	Coshocton	Coshocton.
Le Moyne, Mary	Chicago, Ill	
Le Moyne, Madeleine R	Chicago, Ill	
Lewis, Charles M	Circleville	Pickaway.
Lynn, Chester G	North Jackson	Mahoning.
Markley, Horatio	Nevada	Wyandot.
Martin, Harry	Mt. Vernon	Knox.
Marvin, Frederick	Columbus	Franklin.
Mathew, Katharine A	Columbus	Franklin.
McDonald, John M	Columbus	Franklin.
McDowell, John A	Columbus	Franklin.
Merion, Charles M., Jr	Columbus	Franklin.
Miller, Charles C	Baltimore	Fairfield.
Miller, Charles E	Middletown	Butler.
Miller, William H	McArthur	Vinton.
Morgan, R M	Mt. Vernon	Knox.
Morrow, R H	Steubenville	Jefferson.
Mosher, George C	Findlay	Hancock.
Mustaine, Jefferson K	West Liberty	Logan.
Nichols, J. W	Morristown	Belmont.
O'Brine, David	Worthington	Franklin.
Osborn, Mary R	Columbus	Franklin.
Pool, Harwood R	New York City	
Rector, Allen T	Nebraska City, Neb	
Reed, William F	Pomeroy	Meigs.
Reeve, J. Charles	Dayton	Montgomery.
Reilly, Jane O	Marysville	Union.
Robinson, Edward L	Columbus	Franklin.
Robinson, Parl C	Kenton	Hardin.
Royce, Walter A	Columbus	Franklin.
Sawyier, Reuben A	Columbus	Franklin.
Schoch, Laura A	Canal Winchester	Franklin.
Schoonover, Mollie	Kenton	Hardin.
Schueller, A. W	Columbus	Franklin.
Shedd, Frederick	Columbus	Franklin.
Shepherd, Chester C	Columbus	Franklin.
Shinn, Charles A	Selma	Clarke.
Smith, Horace	Boswell	Mahoning.

UNCLASSIFIED STUDENTS—Continued.

NAME.	RESIDENCE.	COUNTY.
Smith, Lot L., Jr	Columbus	Franklin.
Tarbox, Theodore	Cedarville	Greene.
Townshend, Harriet N	Columbus	Franklin.
Wade, Julia F	Columbus	Franklin.
Wade, Susie K	Columbus	Franklin.
Walton, Alice	Hilliard	Franklin.
Warner, Cora	Chillicothe	Ross.
Webb, Mary	Columbus	Franklin.
Westfall, Lafayette	Covington	Miami.
Whaley, Charles	Pomeroy	Meigs.
Wilgus, Horace L	Conover	Miami.
Williams, George	Columbus	Franklin.
Wing, Charles M	Newark	Licking.
Wilson, Josiah D	Clarksburg, W. Va	
Wilson, Stonewall Jackson	Clarksburg, W. Va	
Wood, Joshua G	Columbus	Franklin.
Wood, Kenneth D	Columbus	Franklin.
Woodbury, William	Columbus	Franklin.
Woods, Mary G	Columbus	Franklin.
Woodward, Charles A	Columbus	Franklin.
Wormley, Mary W	Columbus	Franklin.

THE LIBERAL EDUCATION OF THE INDUSTRIAL CLASSES.

AN ADDRESS DELIVERED IN THE CHAPEL OF THE OHIO STATE UNIVERSITY, AT THE GRADUATION OF ITS FIRST CLASS, JUNE 19, 1878.

By President Edward Orton.

This institution reaches to-day a well-marked stage in its history. Five years ago it opened its doors to a score of students that knocked for admission. To-day its doors are opened again, but this time to give egress to a still smaller number, who have been the first to make their way through its Lecture Rooms and Laboratories and to earn the degrees which it bestows. The kind of training that it gives can now for the first time be fairly judged. Along with the question that is sure to be raised—what kind of education has it given?—comes another: What kind of education was it set to give? This latter question is part of a larger one, viz.: What kind of education was the Congressional Land Grant of 1862 designed to provide? I know that this theme is well worn, and I should pass it by on this occasion were it not that the kind of training which we have essayed to furnish is still criticised and condemned in some quarters, and charges of unfaithfulness to our trust are still repeated against us. But our whole work is so obviously shaped according to both the letter and the spirit of the Land Grant, and these criticisms and charges spring so manifestly from misconceptions of its scope, that I feel myself obliged to-day to make a brief re-examination of this whole ground.

The Land Grant was given, to use its own words, "in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life," the objective point, let it be noted, toward which the whole scheme of public education in this country has been from the first directed, sometimes blindly and unconsciously, it is true, but with an ever clearer recognition of the end to be attained.

I. Who constitute the "industrial classes" of American society? The answer is not hard to find. They make up American society. From them all are derived and to them all return. Our Puritan ancestors, in discarding the rights of primogeniture and in discouraging entailed estates, rendered it almost certain that all of their descendants would touch the earth at least in every third generation. Within that time Fortune is pretty sure to have turned her wheel and lowered all the proud.

Two great sections of our people are expressly referred to in the act of endowment, viz., those devoted to agriculture and those pursuing the mechanic arts. Now, it is manifest that no lines can be drawn around these pursuits which will not enclose the whole field of business activity. The man who moves a bushel of grain to market, the man who sells it in market, belongs by every right to the same class with the man who raises it in the harvest field. It is a mere question of the division of labor.

"When Adam delved and Eve span," agriculture and the mechanic arts were reduced to their lowest terms. Delving and spinning were the sole vocations of the industrial classes of that early day, but the same lines of work have been divided and subdivided by their descendants into scores of callings, each one of which is as necessary as any other to industrial life, and each one of which confers on him who follows it full membership in the ancient and honorable order of the industrial classes.

The term can by no means be limited to the classes that live by manual labor. It may seem paradoxical, but it is nevertheless true, that if any considerable section of our population is left out of account in the terms of the Land Grant, it is the class that lives by rude, manual labor at the great centers of population. No discrimination of course was exercised or intended, but this class is not American in origin, and has not become so in character, and consequently the provisions that are made for American education fail to appeal to it, except in a very limited degree. The help that it is prepared to use in the way of education is of a simpler and lower kind than that which the Land Grant was designed to supply.

It may seem paradoxical, again, to include the manufacturer, the merchant, the builder, the engineer, the banker, in the industrial classes, but here they indisputably belong. They have, for the most part, been gathered from fields which beyond question pertain to industrial life, and having been found faithful in few things, they have been made rulers over many. Though they are no longer able to put their own hands to the plow or plane or spindle, they are still carrying the heavier end of industrial life.

Certainly the Land Grant does not divide our people into rich and poor, cultivated and industrial, and then undertake to provide an education expressly for the latter class—an education which should train them for a narrow sphere and hold them there. Such a scheme is utterly repugnant to our national character and traditions, and would never dare to lift its head into the light of an American day. No such fatuity lies at the foundation of this great provision for national education. The act itself guards expressly against any narrow interpretation, when it declares its purpose to be to train the industrial classes "*for the several pursuits and professions of life.*"

The legislation, then, that undertakes to provide for the education of the industrial classes of American society, must provide for the education of the American people in its normal and characteristic conditions. It must adjust its scheme not to the demands of a contented peasantry who follow, generation after generation, the same humble round of care and labor which their fathers have trod, but rather to the varied necessities and privileges of the American freeman, who is not forbidden to covet for himself the best gifts of life and the State.

The aim of the grant was to make a large contribution to national education in its higher departments. Its purpose was to establish new centers of intellectual light and power throughout the land, and especially in those portions of the country that had not yet accumulated means for laying for themselves these foundations. out on western prairies, upon the broad savannahs of the South, along the slopes of the Rocky Mountains. To the older States it gave the opportunity of making a contribution of peculiar value to their educational resources. To all, it meant the cheapening of higher education. It put a price into the hands of many who would otherwise lack it, with which to buy wisdom. In the older colleges of the East the student's expenses have been doubled, or even trebled, within the last thirty years, but here are endowments ample enough to leave tuition free. This tuition, too, is attainable at the student's doors. He is no longer obliged to traverse half of a continent to begin his college work. These, then, were among the objects of the Congressional Grant, and all of them have been measurably attained in the progress thus far of the institutions founded on it.

II. We have found for whom this education was designed. Let us note some of the chief features by which it is to be distinguished:

1st. It is *higher education* which the grant provides. It presupposes the common school. This is distinctly involved in the very title of the bill—a bill for the endowment and support of *colleges*. The term college is an indeterminate quantity, it must be confessed, especially west of the Alleghanies; but after all it means *something*. It stands not for Latin and Greek or advanced science necessarily, but for a grade of work *distinct from, higher than,* and *supplementary to* the common school, and it is therefore a perversion of these endowments to use them in doing the work of the common schools, under whatever name. When the school has given to the student the training with which it is charged, when it has brought him to a mastery of the common branches, then—certainly not till then—has he a right to knock at the door of the university or college that is established upon the Land Grant. Especially in a State like this, where common school education has been so magnificently provided for, any trenching upon the pittance consecrated to higher education, in order to bring up the work of backwoods districts, would be an abuse of a sacred trust. The State colleges may exercise a very salutary influence upon the lower grades of public education by maintining a proper standard of qualifications for entrance at their own doors, but when they gather into their halls an unsifted, unassorted horde of youths in all phases of intellectual development, and bringing with them the whole range of educational necessities, they not only lose the power of doing their own work worthily and well, but they always ignominiously fail in their vicarious tasks.

No! college and school are close enough to each other already. Let us not degrade and enfeeble both by blending them in an educational hybrid which can do the work of neither.

2d. The core and center of this education must be *science*. There are other branches which it may not exclude, there are some things which it must include, but as to its *leading* branches, it has no option. The places of honor must be given to Chemistry and Physics, to Mathematics and Engineering and Mechanics, to Botany and Zoölogy and Agriculture. If a new institution is created by the Land Grant, it is easy to determine the general order of its departments. If an institution already established becomes the recipient of the national bounty, the new wine is not to be put into old bottles, but a school of science, with its laboratories and museums, springs up under the shadow of university towers. This education is differentiated thus from all that has preceded it. It differs in warp and woof from the traditional college course. It belongs to a new dispensation. To lay foundations for a large and generous scientific training was beyond question the chief purpose of the National Grant. Other valuable ends were included, but without the clearly recognized and imperative demand for scientific training the endowment would never have been made. All the facts that bear on the case lead to this conclusion.

The United States Commissioner of Education, in a recent report, gives to this view the weight of his emphatic indorsement—an indorsement which is in some sense an official interpretation of the act under consideration.

"There seems," he remarks, "to be in the popular mind a misapprehension of the scope of the law of 1862, providing for the establishment of these institutions. At the time of the passage of the act, there were in America very few instrumentalities for adequate instruction in either theoretical or applied science; while in Europe the schools of science had already reached a high degree of development and were exercising a far-reaching influence, not only on all of the professions, outside of the theological and the

legal, and in all departments of arts and manufactures, but also greatly modifying theories and methods of education in nearly all its phases. The international expositions had opened the eyes of our educators and scientists to the inferiority of our country in almost all departments of applied science. Our students were resorting to the European schools for scientific training. Few original works of authority in science were produced or could be produced here from the lack of the requisite opportunities. The country abounded in material wealth, it was poor and provincial in the sciences and arts. What was demanded for our country, therefore, was a class of schools combining in the curriculum means for thorough education in the sciences, both theoretical and applied, and in all the elements of true modern culture. Such appears to have been the intention of the law of 1862."

There are some callings in life to which this kind of training is better fitted than to others, and to that extent the Land Grant limits and restricts the education which it offers; but it limits it in no other way. Such an education may be used if the recipient sees fit in the way of preparation for theology or law. No obligation, expressed or implied, is violated in so using it, but to these callings, all the educational foundations hitherto laid, stand largely pledged. The older colleges are undoubtedly able to give better training for these fields than the newer ones. It would certainly be a great reproach to them if they were not, for this is their chosen ground. The knowledge and discipline that the latter give, will find their amplest use in the varied phases of industrial and scientific work, in agriculture, in mining, in manufactures, in medicine, in engineering, in effecting the exchanges of civilization.

3. This education must be *practical*. A practical education is one that can be applied to the interests and necessities of every day life, that can be used in doing the work of the world. This demand matches exactly with the last, which requires the subject matter of this education to be science. Nothing is so practical as science. It concerns itself with known qualities and relations and forces. It analyses, weighs, measures. But the demand concerns itself not only with the subject matter of the education given, but with the mode of giving it. Science may be taught in an unpractical way. It *is* so taught as often as any other line of subjects. The colleges built on these foundationsmust teach it in such a way as to give the student working power in every field which he enters. His science must be *applied*.

To this end, laboratories, and workshops, and museums, and collections are indispensable. These institutions are never spending money more exactly in the line of their duty and their interest than when they are using it in this way. The student is not to learn of instruments of precision, for instance, from the descriptions and figures of foreign authors only; nor to rest content with merely seeing such instruments through glass doors. With his own eye, he must scan the miracles of organization; with his own hand he must repeat or make the measure of star or monad. He must be able to show to the iron-master the value of the ore that looks worthless, or the worthlessness of the ore that looks valuable. He must save the farmer from falling a victim to the blunders of ignorance or the tricks of greed in the fertilizer which he buys. He must give to the engineer the limits of strength of bolt or beam, within which safety can be assured. He must save the community from the enormous tax which ill-judged or chimerical mining enterprises are for ever imposing. These are examples of the practical services to be rendered by scientific education, but of these services there is no end. Modern life is covered from the cradle to the grave with the useful gifts of science.

But the work of the world cannot be carried on by brain and eye and tongue alone—it needs the *hand* as well. Has the practical education of which we speak anything to do with the hand? It certainly must have, if it fully deserves its name, for the essence of much that is practical lies in hand-work.

Here is a point of confessed difficulty, and yet of vital importance. It is not concerned with college training only, but with our whole scheme of public education. The divorce between hand-work and head-work is so complete, and is maintained so long in the process of high-school and college education, that those who finish courses of study in either find it hard ever to unite them again. Disuse of manual labor breeds distaste for it, and, as a consequence, the callings that require it are shunned, while those in which it can be evaded are so unmistakably overcrowded as to seriously disturb the balance of the body politic. This is the charge most frequently and persistently urged against the colleges established to further industrial education, that the tracks between them and industrial life all lead one way—that many go from shop and farm, but that none return to them again. Much of this criticism is thoroughly unfair and unjust; but there is certainly good ground for dissatisfaction with the results that we are obtaining in these several phases of our public education. The great extension of the high-school system of late years has called very general attention to this dangerous tendency, and thoughtful men have long been busy with the problem. The solution that is always the first to suggest itself is the manual labor school; but I think it may be said with truth that this scheme has been weighed in the balance and found wanting. In its common form it is an artificial combination of two incongruous elements—education that has no direct bearing on labor, and labor that has no connection with education. In the agricultural colleges that adopt compulsory manual labor the case is somewhat better than in other institutions, for a small part of the labor required *is* educational. The student who expects to practice farming is learning in the best possible way a few of the things which he needs to know, and which he has not learned elsewhere. But for nine-tenths of the work required of him there can be no such claim. The object aimed at is avowedly moral rather than educational. It is to keep up the habit of manual labor that the system is enforced.

A measureable success can be secured for the scheme when it is made a central point, and when all the force of the institution is held tributary to it; but it may well be questioned whether the result is worth the price that is paid for it. For my own part, I am convinced that it is not, and I should feel that if the manual element in education were linked to this scheme—to stand or fall with it—its fortunes were already lost. What is needed is a system that shall give manual training in an educational way, and that can justify its introduction into an educational course on educational grounds. There is no country in the world where such a system is needed as much as in our own, and at no previous time in our history has the demand been as imperative as it is to-day.

Light comes at last from an unexpected quarter. Imperial Russia leads the way in the establishment of a system of hand-training that admits of being taught by the same methods by which chemistry and geometry are taught—in classes and by system. Massachusetts, always the pioneer in the things that concern education, has already demonstrated the practicability of the system in American education. The practicability seems to me the only point involved, for the desirability of some system that shall reach this result is beyond question.

I believe that the duty and interest of the institutions founded to promote industrial education alike demand that they shall enter at once upon this work, even though it may still be counted in the experimental stage. The bearings of such training on American life are so numerous and so important, that we have no right to demand the pledge of assured success before making trial of it. Risks may well be pardoned here.

But is the practical education to be provided entirely embraced within the limits of such branches as have been already named? Are there not other branches that can be

styled practical by as good a right, that show themselves practical by as many tests, and that, therefore, make a just demand for a place in a practical curriculum? I venture to repeat a few paragraphs that I have used elsewhere in a similar connection:

"What shall be said of the study of language, especially of our own? Is not the power to make clear, accurate, intelligible statements of what we know or what we think a practical power? Does not our education show itself glaringly defective when it leaves us without this ability? Men with knowledge and ideas but without the power of adequate expression, like lumber wagons loaded with gold, never pass for what they are worth in the world. But this power to use language with precision and efficiency, and still more the ability to endure it with persuasive force, does not come to us in dreams. There is no royal road, no short cut to good English. It is one of the choice fruits of education. If obtained at all it must be bought with a price, the same price that is paid for solid attainments in any other department of knowledge—patient and extended study. Can such study be left out of a practical curriculum?

"Again, is not the training that enables us to detect a flaw in a definition or a fallacy in an argument as directly practical as the ability to test the strength of iron or the purity of white lead? If we have this power, do we not use it in the daily management of our lives? And if we have it not, do we not suffer from the lack in person and estate?

"Inductive logic has to do with the modes of reasoning employed in many branches of science—with the canons of evidence and the methods of proof—and especially with the proper construction of scientific experiments. In what respect is the power to construe an experiment less practical than the power to make one? Of how much use is an experiment unless its author knows what it proves? Nor let it be supposed that the ability to interpret experiments comes of itself. It not unfrequently happens in the practical world that two contradictory or even diametrically opposite statements are made in regard to some practical subject by practical men, both statements being made in good faith and with equal confidence, and both being established, as is thought, by decisive experiments. But nature is true though every man is proved a liar. The error lies in the interpretation of the experiments. Like an unwilling witness that still is bound by the sanctity of his oath, nature tells no more than she is obliged to tell. Point blank questions she answers truly, but to ambiguous ones she gives as ambiguous answers as ever the Delphic oracle gave. How few there are who know how to shape their questions so as to draw out a categorical answer, and how full the world is of these ambiguous replies.

"Nor in our zeal for the practical applications of science must we forget the deep root from which they spring—scientific enthusiasm—the love of the truth for its own sake.

"It is the theory of one generation which bears the practical fruit of the next. We marvel, as well we may, at the number and value of the contributions of science to human welfare which our own age has produced, and we glorify the authors of these practical applications, but let us not forget *their* forerunners and instructors, the men who, without the inspiration of popular applause, and without the hope of material reward, maintained the lonely quest of truth, served science for its own sake, and, by their discoveries, made possible the career of the successful inventor. The history of science is full of illustrations.

"In the best interests of practical utility, then, we must find a place on these foundations for pure science, as well as for applied science; for original investigation, as well as for successful use; for the patient study of those prolific principles which alone can

make our age confer on the age which is to follow it such advantages as it has inherited from its predecessor.

4. Finally, this education must be *liberal*. Strange blending of incongruous ideas and demands! "The liberal education of the industrial classes!" How can this be? That the industrial classes should be educated at all, involved the overthrow of the earlier civilizations of the world; that a limited, practical training shall be offered them, adapting them better to the narrow sphere in which they are doomed to live and labor, is the largest and most generous view that has yet found expression in the Old World. It was reserved for America to add a new and transforming element. In consonance with that recognition of the equality of human rights and privileges, which is the chief corner-stone of our political institutions, the demand at last finds clear and full expression that the education of a *nation* shall be made *liberal*. The crown of liberal culture is no longer the birthright of the few—it is set within the reach of all.

I have, on another occasion, attempted to answer the question, "What is a liberal education?" but the time does not now suffice either to repeat this answer or to frame a new one It is enough to say that it is, in the highest sense, the education that aspires to a balanced and symmetrical culture of all human faculties; the education that concerns itself with this world of matter, which is the stage on which man plays his part, and with man himself, who is the actor on the stage, and of more value than it; it is the education that embraces science, literature, and philosophy.

But such an education, you say, can have no popular adaptations—no direct connections with industrial life. It concerns itself with but the smallest fraction of the race. It is true, as Huxley has well remarked, that there are but few in any generation that aspire to great excellence. The work of the world is mainly common work, and it needs to be done in a common way. Certainly, there are very few that are prepared, either by taste or endowments, to sweep the whole circle of human knowledge—but few that are fitted to make large and important contributions to the sum total of this knowledge, but it is a matter of infinite moment to the State that these few should find adequate opportunities and proper scope, for it is on this higher—this *highest*—education that the worth and value of each generation largely depends.

I beg leave to quote, in this connection, a few golden words from a recent address on education by Governor Horatio Seymour, of New York:

"Nothing can be more mistaken," he remarks, "than the idea that the public has no interest in anything more than what is called primary education, and that all beyond this is a matter of individual concern. If it is true that the intelligence, the virtue, and the prosperity of society demand that some be highly educated—if the interests of persons and property are promoted by this—then the public welfare calls for schools where they can be taught. If this education, by its very nature, makes the student through life, whatever his business may be, a living light-house, shining for the good of all, it is not unjust that such education should be in some degree at the public cost. If the man of science is, through life, by his intercourse with others, an unpaid teacher of facts which give prosperity to our work-shops and new value to every field of industry, it is fair that he should be helped by the public to gain that knowledge which is thus used for the public good. If common schools are demanded by the very nature of our government, then the interests of all the people demand that there shall be some so highly educated that they can, by this influence, keep alive in the public mind a sense of the value of such schools. Where there are no men well trained in learning, there will be no schools fit to teach its first elements."

These institutions, then, must be able to train the few who can carry forward the

knowledge and civilization of the race. But their office is not limited to these; they are able and willing to render a large service to the many; for the term *liberal*, when applied to the education of the industrial classes of American society, must be used in a much more restricted sense than that which I have already given it. But when most restricted, I take it that it is applicable to a training that resolutely refuses to consider solely the station which a man expects to fill. That field the term *practical* covers; but over and beyond the station liberal education recognizes the *man*—with capacities to touch more stations than one—with an intelligence derived from and kindred to the divine intelligence, and with an irrepressible desire to read the secrets of nature, and to learn his own being's end and aim.

The education which seeks in any worthy way to meet these demands is a liberal education—liberal in every one of the stages at which it may be considered.

There is a liberalizing power in well-equipped educational institutions. The stay of the student in them may be short and his work elementary, but library and laboratory, lecture-room and museum, and above all, contact with the masters and students of so many and such diverse branches of knowledge leave an impression on his mind of the breadth and interest of the field of education, that can never be effaced.

In rendering possible such foundations and equipments as these, the Land Grant is making a great contribution to the liberal education of the industrial classes.

Two weeks ago to-day, I stood near the center of one of the great prairies of Illinois. Its undulations stretched away on every side like ocean wastes. Upon one of its slopes, stately halls and ambitious towers arose, consecrated to learning and to labor. I entered the doors, and passed from room to room, finding a score of departments replete with the best facilities that the world knows, for teaching the various branches of modern culture. A library of 13,000 volumes, selected from all the great centers of literature and science, offered knowledge to all comers—nor offered it in vain, for throngs of eager-minded youths were watching daily at the posts of the doors.

I passed with awakened curiosity to the art gallery. After what fashion, I asked myself, is an art gallery on the prairies constructed? Some extravagance of subject or execution, some incongruity of material selected, may certainly be pardoned here. But there was no extravagance or incongruity to pardon. A chamber of the Louvre could not be more severe in its simplicity. Ranged around the ample room, accommodated with the best effects of light and shade, were one hundred or more thoroughly faithful copies of the master-pieces of sculpture that all the ages have preserved. Photographs and engravings of famous architectural and historic scenes were added; and the ripest student of art and history would turn his steps often hither and would linger long.

Leaving the main building, I found on one side a chemical laboratory, just erected, which in completeness and convenience certainly equals any laboratory on this side of the Atlantic. On another side, a spacious green-house, with many divisions, was filled with all rare and beautiful exotics, drawn from every clime and station. Beyond, was the machine shop, well appointed and ringing with busy and successful labor.

Herds of stately Shorthorns and deer-like Alderneys grazed in the fertile fields. A veterinary stable stood ready to receive the ailing animal and to make the sickness or suffering of one, save, by the examples of treatment given, scores on every side; while orchards, and gardens, and broad fields of ripening grain, fixed that square mile of the earth's surface forever in my memory.

In my heart, I blessed the Land Grant that had made all this possible, and that was giving to four hundred ingenuous youths, gathered from Western prairies, so many and so choice agencies of liberal and practical culture. And when I contrasted the fullness

and richness of the training imparted *where the State cherishes and supplements the bounty of the General Government*—when I contrasted this training with what many of these youths would have been obliged to content themselves with, were it not for this bounty, viz., with some pretentious institution, without resources or endowment, with an overworked and under-paid faculty, with a library mainly made of public documents and obsolete polemical theology, with scanty and disabled apparatus, with museums grotesque in the variety of their contents and devoid of educational value, I still blessed the Land Grant and the colleges built upon it. They have not much to say about the Council of Trent and the Synod of Dort, it is true, and they do not nail to their doors the Augsburg Confession, the Westminster Catechism, or the Thirty-nine Articles, and above all, they do not establish compulsory religious worship—a requirement which many devout men feel to be more honored in the breach than in the observance. They do not attempt these things, for one reason, because they have no right to attempt them, for these colleges belong to a divided people—a people with ways of expressing their religious faith as many and as various as were the tongues at the Pentacostal Feast; but they are furnishing after all the highest proof of a Christian mission; they are bringing *glad tidings to the poor*—more life and larger—to the unprivileged classes of American society.

It is easy to ring the changes on the godless colleges, which are godless to the same extent and for the same reason that common schools and high schools are godless. It is possible to invoke fire from heaven on their rising walls, and to prophesy their swift destruction; but the fire does not always descend, and the Master sometimes rebukes his presumptuous followers.

"Let not thy weak, unknowing hand
Presume my bolts to throw,
And deal damnation round the land
On each thou deemest my foe."

I can think of a more excellent way. These colleges are here—they are here to stay. Bring to them, then, the gifts of Christian beneficence; broaden their courses, if they are narrow; sweeten their waters, if they are bitter; plant foundations for philosophy and art, and all elevating and humanizing culture, beside those of science. Where else can they do as great service?

Far be it from me to disparage or belittle the denominational or private colleges. All honor to them for the grand work which they have done and are doing in the education of our people. Let them lengthen their cords and strengthen their stakes. To maintain freedom and virtue on this continent where all the winds of doctrine are let loose to blow, will cost the strenuous effort of all who love freedom and virtue of whatever name.

But after all it is to *public* education that we must look for the chief power in welding and unifying the discordant elements of our national life, and of that public education, the State University, properly expanded and equipped, is the summit and the crown.

TREASURER'S REPORT.

COLUMBUS, OHIO, *November* 22, 1878.

HON. T. J. GODFREY, *Chairman of the Board of Trustees of the Ohio State University:*

SIR: I have the honor to submit herewith the eighth annual report of the financial transactions of the Ohio Agricultural and Mechanical College to May, 1878, and of the Ohio State University to the 15th instant inclusive.

The exhibits made are practically the same in method as in former years, and are as follows:

Statement I. A general statement of cash accounts, showing the receipts, disbursements, and cash balances at the beginning and close of the fiscal year.

Statement II. A statement of the condition of the several appropriations made by the Boards of Trustees of the College and University, the payments made from each during the year, and the balances remaining subject to draft November 15, 1878; with notes explanatory at the foot of the statement.

Statement III. A statement of the drafts made upon the *Income of the Endowment Fund* invested in the "*faith of the State*," and its present condition.

Statement IV. A detailed statement of all the cash received, from every source, into the treasury, during the year.

Statement V. A detailed statement of the disbursements for the same period.

THE ENDOWMENT FUND.

It will not be amiss to observe, to the end that the salient fact may be kept in view, that the proceeds of the sale of the land scrip donated to the State by act of Congress, amounted to only $342,450.80 (see page 63 of report for 1877); that the annual interest thereon, at six per centum, is $20,547.

The act of Congress is peculiarly forcible in providing that "no portion of said fund, nor the interest thereon, shall be applied, directly or

indirectly, under any pretense whatever, to the purchase, erection, preservation, or repair of any building or buildings."

Heretofore all the expenditures for the above purposes have been made from other funds, and, since it will be seen that the account for salaries alone exceeds the interest upon the endowment fund and its accumulations, it is equally obvious that there will not be in the future, as there has not been in the past, any perversion of any part of the income of this fund to any of the uses excepted to in the act of Congress.

ESTIMATES FOR THE CURRENT YEAR (1879).

I have heretofore only in a general way expressed the opinion that the ordinary current expenses involved in the support and maintenance of the University would absorb the definite and reliable resources. I can hardly do more now. It is in your power, as it is your province and duty, to adjust the expenditures to the reliable estimates of receipts. I can only judge of the future by the past, and for data to guide you in part, for the ensuing year, you are respectfully referred to Statements I, II, and III. A fair summary from these exhibits may be made as follows:

Statement I shows that the income from the Endowment Fund, for the year 1879 will be	$32,840 00
[This income is for the calendar year 1879, but there is practically no difference in the result, as the income for the balance of the calendar year 1878 is undrawn.]	
From Statement II we may perhaps estimate the same revenues from students' term bills, rents, etc., say	3,840 00
From other sources, say	1,318 00
Total estimated resources	$38,000 00

I estimate the authorized disbursements, for the same period, at $38,000.

I not only do not see any ready method of reducing this estimate of disbursements, but am aware that there are many very proper ways of largely increasing it, if the funds were available; so pressing and imperative indeed are some of the needs of the University, that I can but hope that the General Assembly will deem it wise to extend its fostering care over the institution. In its wisdom it has, during the brief history of the University, legislated into existence four several boards of trustees, to manage its affairs. It has virtually said to these boards, "You must serve without compensation, but you shall be paid your necessary expenses while in the discharge of your duties, and you shall be paid out of the funds of the University." The expenses of the several boards up

to date have been $8,753.84, and the only appropriation made by the State, to offset these expenses, was made in 1871, of $4,500, to defray the expenses of the first board of nineteen, that had traversed the State during the previous year, in seeking a favorable place for the location of the College; the balance against the State, on this account is, therefore, $4,253.84, and this is a legitimate item for a demand that the funds of the University be at least reimbursed, and also, that a reasonable amount be appropriated for the expenses of the Board for the current year.

Very respectfully yours,

HENRY S. BABBITT, *Treasurer.*

STATEMENT I.

A GENERAL STATEMENT OF CASH ACCOUNTS FOR THE FISCAL YEAR ENDING NOVEMBER 15, 1878.

HENRY S. BABBITT, *Treasurer, in account with the Ohio Agricultural and Mechanical College and the Ohio State University:*

DR.

1877—Nov. 16.	For balance of cash on hand			$2,250 67
	To cash from various sources, viz:			
	From Treasurer of State on account of the income of the endowment fund, balance due on interest accrued in 1877	$8,711 45		
	On account of same for 1878	18,777 00		
			$27,488 45	
	From students' term bills:			
	Winter term, 1877–8	$1,134 00		
	Spring term, 1878	999 00		
	Fall term, 1878	1,107 00		
			3,240 00	
	From rent of houses:			
	President Orton	$420 00		
	Prof. Mathew	166 63		
	Prof. Mendenhall	20 00		
			606 63	
	From proceeds of notes received for Virginia Military land sales	$1,414 41		
	For interest on same	221 40		
	From sales of Virginia Military lands.	2,593 90		
			4,229 71	
	From sale of materials to students		82 31	
	From interest on bank balances from September 15, 1876, to November 15, 1878—two years and two months		93 26	
	Total receipts during the year			35,740 36
	Total receipts, including above balance			$37,991 03

CONTRA, CREDIT.

1878—Nov. 15.	By expenditures as follows (for details see Statement V.):		
	For support and maintenance of the University, viz:		
	For salaries	$24,455 73	
	For expenses of trustees	633 95	
	For insurance	558 50	
	For other current expenses	2,927 76	
			$28,575 94
	For furniture and apparatus		659 84
	For library		151 44
	For expenses on Virginia Military Land account		1,909 73
	For farm expenses, drainage, improvements and repairs		3,656 76
	For Commencement expenses		150 00
	For department supplies*		876 34
	For entertainment of Legislative committee		28 60
	Total disbursements for the year		$36,008 74
	Leaving a balance of cash on hand of		1,982 29

VIRGINIA MILITARY LAND ACCOUNTS.

I have given the details of all transactions on this account that have passed through my hands, in the several preceding reports; a brief summary will show what these transactions have amounted to, and the present condition of the account.

The cash receipts into the treasury from proceeds of sale of Virginia Military lands have been as follows:

1871-2-3		.....
1874		$1,885 00
1875		8,121 82
1876		3,870 35
1877		752 49
1878		4,229 41
Total receipts to November 15, 1878		$18,859 37

The disbursements for the same period were as follows:

1872	$3,100 00	
1873	2,912 20	
1874	12 00	
1875	750 00	
1876	735 00	
1877	1,520 00	
1878	1,909 73	
Total disbursements		$10,938 93
Balance, showing net receipts		$7,920 44

The foregoing statement does not include any of the cash transactions in these lands by the committees of former boards, and referred to in the report of Hon. Ralph Leete

* It will be observed that the cost of supplies to the departments was materially greater than this sum; the items previous to June 21, 1878, were charged to the account of "other current expenses."

n the annual report for 1876; nor of the notes given for deferred payments on land sales which remain in my hands, and a schedule of which is placed in possession of the Secretary of t oard. These notes, just two hundred in number, represent a nominal or face valuation of $19,214.63; the larger part of them being past due, their real value is undeterminable at present.

The bills receivable, taken for sale of land, remaining in my hands November 15, 1877, amounted to	$14,779 78
Notes received during the fiscal year 1878	5,849 26
Total	$20,629 04
Amount collected on principal of the notes during the year (Statements I and IV)	1,414 41
Balance, showing notes receivable, unpaid to date, amounting to	$19,214 63

I hereby certify that the above sum represents the nominal value of all the notes which I have received and not otherwise accounted for in the several annual reports heretofore made, and which now remain in my hands belonging to the Ohio State University.

HENRY S. BABBITT, *Treasurer.*

STATEMENT II.—APPROPRIATIONS.

A STATEMENT SHOWING THE BALANCES OF THE SEVERAL APPROPRIATIONS AT THE BEGINNING OF THE FISCAL YEAR (NOVEMBER 16, 1877), THE AMOUNTS APPROPRIATED, AND THE SUMS EXPENDED FROM EACH APPROPRIATION DURING THE YEAR, AND THE BALANCES SUBJECT TO DRAFT AT THE END OF THE YEAR, NOVEMBER 15, 1878.

Appropriations, and for what purpose.	Balances of authorized appropriations unexpended Nov. 15, 1877.	Appropriations made during the fiscal year 1878.	Amounts subject to draft during fiscal year 1878.	Expenditures during the fiscal year 1878.	Balances of appropriations unexpended Nov. 15, 1878.
Current expenses for the support and maintenance of the University.	$12,617 11	[a]$33,777 00	$46,394 11	[e]$28,575 94	$17,818 17
Furniture and apparatus.	1,333 37	.....	1,333 37	659 84	673 53
Library	855 01	500 00	1,355 01	151 44	1,203 57
Expense on acc't of Virginia Military Lands..	.....	[b]1,909 73	1,909 73	1,909 73	.....
Entertainment of Legislative Committees.....	28 60	.....	28 60	28 60	.....
Farm expenses, drainage, improvements, and repairs.....	.....	[c]3,958 22	3,958 22	3,656 76	301 46
Special analyses required by law.....	.....	500 00	500 00	.....	500 00
Commencement expenses, 1877	.....	150 00	150 00	150 00	.....
Department supplies....	.....	[d]1,950 00	1,950 00	876 43	1,073 57
Totals	$14,834 09	$42,744 95	$57,579 04	$36,008 74	$21,570 30

[a] This item consists of appropriations made November 21, 1877, of $25,000, and June 19, 1878, of $8,277.00, for "support and maintenance;" June 21, 1878, of $200.00 for advertising, and of $300.00 for assistants to professors.

[b] This appropriation consists of the several items of expenditure on the same account, each of which was voted for by the Board.

[c] This amount includes $2,000.00 appropriated November 22, 1877, for drainage, for farm buildings, and other improvements; May 17, 1878, $300.00 for repairs to Club House; June 21, 1878, $1,200.00 for carrying on farm operations; same date, to Professor of Agriculture for balance of account of farm expenses, $408.22; and for cistern and repairs at the residence of Prof. Townshend, $50.00.

[d] There are two items in this appropriation—one made June 21, 1878, for department supplies, $1,350.00, and one of $600.00 September 12, 1878, for materials for the mechanical department.

[e] This amount consists of disbursements for the following purposes: For fixed salaries, $24,455.73; for expenses of Trustees, $633.95; for fire insurance, $558.50; and for other "current expenses" incident to the support and maintenance of the University, $2,927.76.

The want of clearness in designating the specific appropriations from which orders should be paid has made it necessary to consolidate some of the appropriations: this has been done by associating those of a kindred character, yet it has been impossible for the Treasurer to make that sharp discrimination in the several debits that is desirable, and would seem to be required by the specific appropriations that have been made, for the truth is that he was not advised of the several minor appropriations until near the close of the year, and it became necessary to classify the payments as closely as possible with the material on hand. Whether any want of exactness in this distribution has been shown can be determined by those who know, in a comparison of the column of expenditures in the foregoing table with the detailed statement of disbursements, as shown in Table V of this report.

STATEMENT III.

SHOWING THE AMOUNT OF THE OHIO STATE UNIVERSITY ENDOWMENT FUND, COMPUTED IN ACCORDANCE WITH THE PROVISIONS OF THE ACT PASSED FEBRUARY 10, 1871. (O. L., vol. 67, page 15.)

Amount of fund as principal, January 1, 1878			$501,952 56
Add six months' interest on same to July 1, 1878, at 6 per cent. per annum		$15,058 58	
Add interest on $34,500.00 of Franklin County Agricultural Bonds to March 15, 1878	$1,207 50		
Add interest on last amount to July 1, 1878	21 13		
		1,228 63	
Total additions first half year			16,287 21
Making			$518,239 77

From which sum is to be deducted payments made by the State from income of the fund since last report, as follows:

Nov. 25, 1877—$3,000.00,	and interest to July 1, 1878,	7 mos.	2 days	$106 00
Dec. 22, 1877— 3,000.00,	" "	6 mos.	8 days	94 00
Dec. 31, 1877— 2,711.45,	" "	6 mos.	0 days	81 34
Mar. 15, 1878— 5,000.00,	" "	3 mos.	15 days	87 50
May 31, 1878— 3,000.00,	" "	1 mo.	0 days	15 00
June 22, 1878— 3,000.00,	" "	0 mos.	8 days	4 00
June 29, 1878— 1,000.00,	" "	0 mos.	1 day	16
$20,711.45				$388 00
Total deductions first half year				21,099 45
Leaving amount of new principal July 1, 1878				$497,140 32
Add interest on that sum to January 1, 1879		$14,914 21		
Add interest on Franklin county bonds as above, coupons falling due September 15, 1878		1,228 63		
Total additions second half year				16,142 84
Making				$513,283 16

From which is to be deducted the following payments:

Aug. 6, 1878—$1,000.00,	and interest to Jan. 1, 1879,	4 mos.	24 days	$24 00
Sept. 28, 1878— 2,000.00,	" "	3 mos.	2 days	30 67
Oct. 22, 1878— 2,500.00,	" "	2 mos.	8 days	28 33
Nov. 12, 1878— 1,277.00,	" "	1 mo.	18 days	10 10
$6,777.00				$93 10
Total deductions second half year				6,870 10
Leaving amount of fund derived from proceeds of sale of land-scrip and accumulations thereto, till January 1, 1879				$506,413 06

Upon this sum interest at the rate of six per cent. per annum, compounded semi-annually, is payable, under the provisions of the act passed May 1, 1878 (O. L., vol. 75, page 126), to the Ohio State University. Besides this, a deposit made with the Treasurer of State by the Trustees of the Ohio Agricultural and Mechanical College, complying with provisions of an act passed January 20, 1871, of the seven per cent. bonds of Franklin county, amounts to	$34,500 00
Making an aggregate fund, held in trust by the State for the University, of	$540,913 06
Interest upon the above sums, computed upon the same terms, for 1879, will amount to	32,842 00
Requisitions were made and warrants were issued upon the State Treasury during the fiscal year 1878, as above shown, to the amount of	27,488 45
This sum includes a portion of the interest accrued and subject to draft in 1877, but not drawn until after the close of the fiscal year 1877, amounting to	8,711 45
Making the amount received by the Treasurer of the University upon the appropriation of $32,552.81, for interest on the irreducible debt of the State in 1878 (see page 25 of the Auditor of State's report for 1877), the sum of	18,777 00
And leaving still subject to draft, if required by the University, and if drawn out prior to January 1, 1879, the sum of	13,775 81
	$32,552 81

The act of February 10, 1870, requires the calculations of interest to be made by semi-annual rests, on the first of January and July of each year, but the fiscal year of the State and of the University ends on the 15th of November, and the accounts are all settled at that date. It is held by the Attorney-General that the balances of appropriations undrawn on the first of January and July annually, revert to the parent fund, as part of the principal, which can not be diminished except by special legislation.

STATEMENT IV.

A STATEMENT IN DETAIL OF CASH RECEIVED FROM ALL SOURCES, DURING THE FISCAL YEAR ENDING NOVEMBER 15, 1878, BY HENRY S. BABBITT, TREASURER.

Date.	From whom received, and on what account.	Amount.
1877.		
Nov. 16	Balance of cash on hand	$2,250 67
21	Franklin National Bank, interest on bank account	36 64
30	Treasurer of State, income of endowment	3,000 00
Dec. 3	J. W. Kinney & Co., Virginia Military land sales	1,254 08
22	Treasurer of State, income of endowment	3,000 00
27	L. C. Shope, on Virginia Military land note	20 78
31	Treasurer of State, income of endowment, balance of interest accrued to date	2,711 45
1878.		
Jan. 22	President Orton, house rent	105 00
22	Jere. Ellis, Virginia Military land notes, $54.38; interest, $6.91	61 29
25	W. H. Taylor, Virginia Military land note, $39.00; interest, $4.68	43 68
30	Capt. C. A. Barton, Virginia Military land sales	50 00
30	A. M. King (by Barton), Virginia Military land sales	52 05
Feb. 4	Capt. Barton, Virginia Military land sales	16 97
5	J. Hauser, two Virginia Military land notes, $114.00; interest on same, $4.34	118 34
5	J. F. M. & H. B. Humphreys, Virginia Military land note, $82.06; interest, $41.94	124 00
Mar. 4	Jas. Newman, two Virginia Military land notes, $25.00; interest, $3.00	28 00
4	Prof. Thos. Mathew, house rent to March 1	33 33
4	S. B. Violet, Virginia Military land sale	30 00
4	O. C. & M. McAfee, Virginia Military land sale	25 00
9	Capt. Barton, Virginia Military land sale, $10.74 and $93.10	103 84
11	President Orton, house rent	70 00
15	Treasurer of State, income of endowment	5,000 00
15	C. Springer, Virginia military land notes—interest	3 24
25	E. Simpson, " " "	12 18
25	John Williams, Virginia Military land notes, $46.70; interest, $11.30	58 00
26	Franklin National Bank, interest on deposits	26 62
26	Students, winter term bills, $1,250.00, less refunded on fall and winter terms, 1877, $116.00	1,134 00
26	Prof. Mathew, house rent to April 1	16 66
April 6	Students, on spring term bills	546 00
8	" " "	254 00
9	Capt. Barton, Virginia Military land sales	36 75
15	A. Kisling, Virginia Military land, note paid	58 75
15	same " " interest	7 43
15	James Porter, " " "	21 00
15	same " " note	100 00
15	Julius Bresland, on Virginia Military land, note for $111.50	100 00
22	J. Hauser, Virginia Military land sale	41 90
29	Samuel Wood, Virginia Military land, note	16 00
29	same " " interest	4 70
29	Prof. Mathew, house rent	16 67
30	John Collins, Virginia Military land, note	30 00
30	same " " interest	50
May 2	J. M. Beaver, " " "	2 45
2	same " " note	20 75
7	Capt. Barton, Virginia Military land sale	54 90
	Students, balance of spring term bills, $234.00, less deposits for damages refunded, $35.00	199 00
	Total receipts for calendar year, 1878, in name of O. A. and M. College, carried into account of O. S. University	$20,896 62

STATEMENT IV.—Continued.

Date.	From whom received, and on what account.	Amount.
1878.		
May 26	Receipts from O. A. and M. College account	$20,896 62
30	J. Bresland, balance of note, $11.50; interest, $8.40	19 90
30	Capt. Barton, sale of Virginia Military land	30 90
31	Treasurer of State, income of endowment	3,000 00
June 8	A. J. Waters, interest on note	3 00
8	President Orton, house rent	70 00
8	Prof. Mathew, house rent	16 66
20	Capt. Barton, Virginia Military land sales	73 80
22	Treasurer of State, income of endowment	3,000 00
24	President Orton, house rent	105 00
24	Prof. Mathew, house rent	16 66
29	Treasurer of State, income of endowment	1,000 00
July 3	Prof. Norton, sale of apparatus to students	82 31
3	W. J. Easter, note, $38.40; interest, $2.05	40 45
3	Capt. Barton, sale of Virginia Military land	2 29
11	W. J. Easter, interest on notes	2 10
27	Cuppett & Webb, on note	134 40
29	Milton Hart, interest on five notes	8 80
Aug. 2	Capt. Barton, Virginia Military land sales	55 05
6	Treasurer of State, income of endowment	1,000 00
16	Francis Whitten, on note	5 00
16	T. C. Mendenhall, balance due on house rent	20 00
16	R. J. Johnston, notes, $172.94; interest, $24.06	197 00
28	Capt. Barton, Virginia Military land sale	63 45
Sept. 2	Prof. Mathew, two months' house rent	33 33
5	B. M. Renoe, on note, $12.50; interest, $2.40	14 90
13	Capt. Barton, Virginia Military land sale	49 90
18	Students, fall term bills (part)	880 00
20	J. G. Bond, note, $68.00; interest, $8.42	76 42
28	Treasurer of State, income of endowment	2,000 00
Oct. 3	President Orton, house rent	35 00
3	Prof. Mathew, house rent	16 66
3	Capt. Barton, Virginia Military land sales	202 75
17	same " "	88 80
17	H. Cooper, on note, $16.00; interest, $5.90	21 90
22	Treasurer of State, income of endowment	2,500 00
Nov. 4	President Orton, house rent	35 00
4	Prof. Mathew, house rent	16 66
4	Capt. Barton, Virginia Military land sales	74 75
9	same " "	166 82
9	Cuppett & Webb, by H. Leet & Co., on note	37 85
12	Chas. A. Barton, on his note	50 00
12	same Virginia Military land sales	100 00
12	Students, net balance of fall term bills	227 00
12	Treasurer of State, income of endowment	1,277 00
13	Capt. Barton, Virginia Military land sale	19 90
13	Erasmus Tucker, notes, $160.40; interest, $32.60	193 00
15	Franklin National Bank, interest on deposit account to date	30 00
	Total receipts for fiscal year 1878, including balance of $2,250.67, on hand Nov. 16, 1877	$37,991 03
	Total disbursements for same period (see statement No. V)	36,008 74
	Balance of cash on hand Nov. 15, 1878	$1,982 29

HENRY S. BABBITT, *Treasurer.*

STATEMENT V.

A Detailed Account of Payments made by Henry S. Babbitt, Treasurer, during the Fiscal Year ending November 15, 1878.

Date.	Number of order.	To whom paid.	For what purpose.	From what appropriation.	Amount.
1877.					
Nov. 17	937	M. A. Suydam	Coal	Current expenses	$141 00
17	938	Prof. Norton	Chemical supplies	"	343 80
17	939	E. F. Ensign	Expenses as trustee	Trustees' expenses	16 50
22	940	C. W. Horr	" "	"	12 00
23	941	J. E. McKinnon	Painting gas-holder	Farm expenses and repairs	7 00
24	942	E. R. Kirk	Carpenter work	Current expenses	35 00
24	943	M. Dillon	Students' labor	"	7 63
28	944	H. S. Babbitt, Treasurer	Paid expenses of trustees	Trustees' expenses	178 10
28	945	J. Sullivant, Secretary	Salary for November	Salaries	125 00
28	946	President Orton	" "	"	315 00
28	947	Prof. Mendenhall	" "	"	225 00
28	948	" Townshend	" "	"	225 00
28	949	" J. A. Church	" "	"	225 00
28	950				
28	951	Prof. McFarland	Salary for November	Salaries	225 00
28	952	" Millikin	" "	"	225 00
28	953	" Tuttle	" "	"	225 00
28	954	" Norton	" "	"	225 00
28	955	" Smith	" "	"	150 00
28	956	" Mathews	" "	"	85 00
28	957	" Alice Williams	" "	"	45 00
28	958	" Lomia	" "	"	50 00
28	959	M. Dillon	Extra work	Current expenses	16 55
28	960	same	Janitor, salary for November	Salaries	37 50
28	961	Ohio Furniture Co	Furniture	Furniture and apparatus	234 00
30	962	Prof. Townshend	Improvement of farm	Farm expenses, etc	400 00
30	963	E. R. Kirk	Carpenter work	Current expenses	25 35
Dec. 1	964	C. Shewry	Repairing gate	Farm expenses and repairs	8 00
2	965	M. McDonald	Hack hire for committee	Legislative committees	2 00
7	966	J. E. McKinnon	Labor in mining department	Current expenses	21 00
7	967	Prof. Townshend	Improvement of farm	Farm expenses and repairs	456 45
7	968	C. Kinsinger	Expenses as trustee	Trustees' expenses	37 00

11	969	Akins & Hampson	Water cooler	Current expenses	5 00
13	970	Prof. Tuttle	Salary for December	Salaries	225 00
15	971	A. Carlisle	Lumber	Farm expenses and repairs	54 04
15	972	H. N. Greene	Students' work	Current expenses	9 50
15	973	Samuel Harmon	Hack hire	Legislative committees	2 00
18	974	President Orton	Salary for December	Salaries	315 00
18	975	Prof. Mendenhall	" "	"	225 00
18	976	same	Supplies for Physical Laboratory	Current expenses	8 94
18	977	Prof. Townshend	Salary for December	Salaries	225 00
18	978	" Church	" "	"	225 00
18	979	" McFarland	" "	"	225 00
18	980	" Millikin	" "	"	225 00
18	981	" Norton	" "	"	225 00
18	982	" Smith	" "	"	150 00
18	983	" Mathews	" "	"	85 00
18	984	" Lomia	" "	"	50 00
18	985	M. Dillon	Janitor, salary for December	"	37 50
18	986	Miss Williams	Salary for December	"	45 00
18	987	R. G. Hanford & Son	Plants	Farm expenses and repairs	5 85
19	988	Columbus Transfer Co	Freights	Current expenses	4 52
19	989	Sidney H. Short	Sundry articles	"	4 66
19	990	A. Cunningham	Latin tutor	Salaries	50 00
22	991	M. Dillon	Extra work	Current expenses	9 00
22	992	E. R. Kirk	Carpenter	"	18 00
24	993	J. Sullivant, Secretary	Salary for December	Salaries	125 00
27	994	Stitt, Price & Co	Gas lime	Current expenses	3 06
29	995	Chas. M. Owen	Repairing furnace	Farm expenses and repairs	31 25
1878.					
Jan. 2	996	Hershiser & Gibson	Lumber	Current expenses	15 50
3	997	H. S. Babbitt, Treasurer	Printing	"	18 50
3		same	Postage, etc	"	7 10
		same	Trustees' expenses	Trustees' expenses	14 70
5	998	Kilbourne, Jones & Co	Hardware	Farm improvements, etc	79 55
7	999	McCune, Lonnis & Stoner	Brushes	"	6 50
15	1000	Geo. W. Gleason	Books, etc	Library	32 03
18	1001	Chas. A. Barton, agent	Services on account of Va. Mil. land	Virginia Military land	334 26
18	1002	Jeremiah Ellis	" " " "	" "	67 00
18	1003	W. W. Overman	" " " "	" "	28 00
18	1004	R. Leete, per S. S. Rickly	" " " "	" "	500 0
18	1005	J. Sullivant, Secretary	Expenses, music	Leg. com., $24.60; cur. exp. $21.40	46 0
18	1006	E. S. Ritchie & Son, New York	Physical Laboratory supplies	Furniture and apparatus	122.4
21	1007	G. G. Collins, Administrator	Services of W. W. Pollard	Current expenses	33 7

Date.	Number of order.	To whom paid.	For what purpose.	From what appropriation.	Amount.
1878.					
Jan. 22	1008	Freemans, Staley & Morton	Military department	Current expenses	$34 63
22	1009	Ohio Tool Co.	Specimens of wood	"	4 00
25	1010	Pres. Orton	Salary for January	Salaries	315 00
25	1011	same	Sundry expenses	Current expenses	60 99
25	1012	Prof. Mendenhall	Salary for January	Salaries	225 00
25	1013	" Townshend	" "	"	225 00
25	1014	" Tuttle	" "	"	225 00
25	1015	" McFarland	" "	"	225 00
25	1016	" Smith	" "	"	150 00
25	1017	" Mathew	" "	"	85 00
25	1018	" Lomia	" "	"	50 00
25	1019	" Alice Williams	" "	"	45 00
25	1020	" Norton	" "	"	225 00
25	1021	" Millikin	" "	"	225 00
25	1022	" Church	" "	"	225 00
26	1023	" Norton	Chemical supplies	Current expenses	298 06
26	1024	E. R. Kirk	Carpenter, etc.	"	34 00
26	1025	M. Dillon	Janitor, salary	Salaries	61 00
27	1026	E. R. Kirk	Carpenter-work	Current expenses	12 00
30	1027	Geo. Stacey & Co.	Gas retorts	Farm improvements, etc.	110 00
Feb. 1	1028	Columbus Transfer Co.	Freights	Current expenses	21 90
4	1029	J. Sullivant, Secretary	Salary	Salaries	125 00
5	1030	Comly & Francisco	Order-book	Current expenses	8 00
5	1031	Columbus Transfer Co	Ordnance	"	21 89
5	1032	Oliver Davie	Supplies for Zoölogical Department	Furniture and apparatus	90 00
7	1033	C. E. Thorne, Farmer	Paid for smith-work	Farm improvements, etc.	3 25
16	1034	same	" lumber and labor	" "	226 14
22	1035	A. D. Rodgers	Paid to Asa Gray for books	Library	51 21
22	1036	Prof Tuttle	Salary for February	Salaries	225 00
23	1037	M. Dillon	Extra work	Current expenses	33 05
26	1038	Pres. Orton	Salary for February	Salaries	315 00
26	1039	Prof. Mendenhall	" "	"	225 00
26	1040	" Townshend	" "	"	225 00

26	1041	" Church	" "	"		225 00
26	1042	" Millikin	" "	"		225 00
26	1043	" McFarland	" "	"		225 00
26	1044	" Norton	" "	"		225 00
26	1045	" Smith	" "	"		150 00
26	1046	" Mathew	" "	"		85 00
26	1047	" Lomia	" "	"		50 00
26	1048	" Williams	" "	"		45 00
26	1049	M. Dillon	Janitor	"		37 50
26	1050	Prof. Townshend	Advertising special course	Current expenses		81 75
27	1051	Wassall Fire-Clay Co	Clay for retorts	Farm expenses, etc.		1 50
27	1052	J. Sullivant, Secretary	Salary for February	Salaries		125 00
March 1	1053	I. B. Potts	Repairing water pipes	Farm improvements, etc.		3 15
6	1054	Columbus Paper Co.	Drawing department	Current expenses		7 20
12	1055	Columbus Transfer Co	Freights	"		1 22
14	1056	W McCrory	Gas coal	"		19 73
14	1057	Prof. McFarland	Supplies for department	"		4 00
20	1058	Chas. A. Barton, Agt.	Virginia Military Land account	Virginia Military Lands		181 00
23	1059	C. C. Howard	Chemical laboratory work	Current expenses		126 00
25	1060	E. R. Kirk	Carpenter-work	"		27 15
25	1061	Prof. Tuttle	Salary for March	Salaries		225 00
26	1062	Pres. Orton	" "	"		315 00
26	1063	J. Sullivant	" " and expenses	"		128 50
26	1064	H. N. Greene	Students' labor	Current expenses		7 12
26	1065	Prof Mendenhall	Salary for March	Salaries		225 00
26	1066	" Townshend	" "	"		225 00
26	1067	" Church	" "	"		225 00
26	1068	" McFarland	" "	"		225 00
26	1069	" Millikin	" "	"		225 00
26	1070	" Norton	" "	"		225 00
26	1071	" Smith	" "	"		150 00
26	1072	" Mathew	" "	"		85 00
26	1073	" Lomia	" "	"		50 00
26	1074	" Williams	" "	"		45 00
26	1075	A. Cunningham	Latin tutor	"		75 00
26	1076	M. Dillon	Janitor	"		38 00
26	1077	H. A. Rogers	Portable forge	Fur. and app.		40 95
26	1078	T. C. Mendenhall	Laboratory supplies	Current expenses		7 50
30	1079	M. Dillon	Extra work	"		29 55
30	1080	Wm. Cassill	Shrubbery	Farm expenses, etc.		23 00
30	1081	Prof. Lomia	Instructor in elocution	Salaries		50 00
April 1	1082	Columbus Gas-fitting Co.	Labor and materials	Farm, etc		23 40

Date.	Number of order.	To whom paid.	For what purpose.	From what appropriation.	Amount.
1878.					
April 2	1083	I. B. Potts	Repairing pipes	Farm, etc	$4 90
2	1084	H. S. Babbit, Treasurer	Salary to April 1	Salaries	150 00
		same	Paid expenses of trustees	Trustees	57 95
		same	Postage, etc	Current expenses	6 12
3	1085	Columbus Transfer Co	Freight and drayage	"	2 29
4	1086	E. B Armstrong	Physical laboratory	"	27 80
4	1087	Prof. Norton	Chemical supplies	"	51 39
5	1088	Geo. H. Twiss	Physical laboratory	"	12 55
5	1089	C. R. Stephens	Repairing glass	Farm improvements, etc	4 50
6	1090	John H. Klippart	Books	Library	36 00
6	1091	Prof. Mathew	Supplies	Current expenses	70 00
9	1092	J. & G. Butler	Cement for cisterns	Farm expenses, etc	25 13
10	1093	Ed. Hughes	Repairing gas-works	" "	21 25
10	1094	Wm. Odea	" "	" "	14 37
16	1095	I. B. Potts	" pipes	" "	17 82
24	1096	Forest City Chemical Co	Paint for pipes	" "	7 00
24	1097	Columbus Transfer Co	Freights	Current expenses	5 43
26	1098	Pres. Orton	Salary for April	Salaries	315 00
26	1099	Prof. Mendendall	" "	"	225 00
26	1100	" Townshend	" "	"	225 00
26	1101	" Church	" "	"	225 00
26	1102	" Tuttle	" "	"	225 00
26	1103	" Millikin	" "	"	225 00
26	1104	" McFarland	" "	"	225 00
26	1105	" Norton	" "	"	225 00
26	1106	" Smith	" "	"	150 00
26	1107	" Mathew	" "	"	85 00
26	1108	" Lo nia	" "	"	50 00
26	1109	" Williams	" "	"	45 00
26	1110	M. Dillon	Janitor	"	37 50
26	1111	same	Ex ra work	Current expenses	44 25
27	1112	Prof. Mendenhall	Supplies for laboratory	" "	17 15
30	1113	Asa Gray	Nos. 73 and 74 Flora Braz	Library	15 00

May	1	1114	J. Sullivant, Secretary	Salary, expenses	Salaries, $125; current exp., $3.00	128 00
	1	1115	President Orton	Sundry expenses	Current expenses	37 49
	2	1116	Kilbourne, Jones & Co	Hardware	" "	9 50
	3	1117	Wassall Fire Clay Co		Farm expense and repairs	10 85
	4	1118	T. C. Mendenhall	Spectroscope	Furniture and apparatus	86 42
	4	1119	Wm. H. McDonald	Repairing plastering	Farm expense and repairs	4 00
	4	1120	Prof. Norton	Chemical supplies	Current expenses	69 52
	6	1121	Henry S. Babbitt	{ Salary to May 1 { Trustees' expenses paid	Salaries Trustees' expenses	33 33 10 00
	13	1122	Prof. Mathew	Materials for his department	Current expenses	12 62
	14	1123	R. G. Hanford & Son	Shrubbery for grounds	Farm improvements, etc	15 75
	14	1124	M. Dillon	Salary as janitor	Salaries	30 00
	15	1125	F. F. Hoffman	Legal services	Current expenses	3 00
	15	1126	Westwater & Co	Gas coal	" "	9 00
			[End of orders drawn in name of Ohio Agricultural and Mechanical College.]			
			Amount forward to Ohio State University			$20,418 73
			Disbursements—Continued.			
May	25	1	T. H. Schneider	Supplies for military department	Current expenses	$3 00
	25	2	Prof. Tuttle	Salary for May	Salaries	225 00
	28	3	E. R. Kirk	Gas-making, etc	Current expenses	19 70
	29	4	Wm. Riches	University seal	" "	13 00
	31	5	President Orton	Salary for May	Salaries	315 00
	31	6	Prof. Mendenhall	" "	"	225 00
	31	7	" Townshend	" "	"	225 00
	31	8	" Church	" "	"	225 00
	31	9	" Millikin	" "	"	225 00
	31	10	" McFarland	" "	"	225 00
	31	11	" Norton	" "	"	225 00
	31	12	" Smith	" "	"	150 00
	31	13	" Mathew	" "	"	85 00
	31	14	" Lomia	" "	"	50 00
	31	15	" Williams	" "	"	45 00
	31	16	M. Dillon	Balance of salary as janitor	"	7 50
	31	17	Prof. J. A. Church	Supplies for department	Current expenses	39 35
June	4	18	W. M. Savage	Repairs Physical Laboratory	" "	3 59
	5	19	F. Keffer	Assisting janitor	" "	4 95
	5	20	M. Dillon	Night-work—making gas	" "	9 00

Date.	No. of order.	To whom paid.	For what purpose.	From what appropriation.	Amount.
1878.					
June 6	21	Hershiser & Gibson	Lumber for cabinet	Furniture and apparatus	$4 25
12	22	Curtis C. Howard	Analytic work	Current expenses	56 00
13	23	D. M. Brelsford, Steward	Brooms	" "	2 50
15	24	E. B. Armstrong	Sprinkling cans	" "	4 00
18	25	J. Sullivant, Secretary	Salary to 15th	Salaries	107 41
19	26	President Orton	Salary for June	"	315 00
19	27	Prof. Mendenhall	" "	"	225 00
19	28	" Townshend	" "	"	225 00
19	29	" Church	" "	"	225 00
19	30	" Tuttle	" "	"	225 00
19	31	" Millikin	" "	"	225 00
19	32	" Norton	" "	"	225 00
19	33	" Smith	" "	"	150 00
19	34	" Mathew	" "	"	85 00
19	35	" Lomia	Balance of salary	"	100 00
19	36	T. C. Jones	Expenses to Washington	Virginia Military Land	50 00
19	37	Prof. McFarland	Salary for June	Salaries	225 00
20	38	A. Cunningham	Tutor in Ancient Languages	"	75 00
20	39	Stephen Johnson	Expenses as trustee	Trustees' expenses	10 00
21	40	H. S. Babbitt, Treasurer	Paid expenses of Board of Trustees	" "	66 80
21	41	Chas. Downes	Helping janitor	Current expenses	7 75
21	42	T. J. Godfrey	Expenses as trustee	Trustee's expenses	17 95
21	43	J. B. Jamison	" "	" "	18 70
21	44	S. H. Ellis	" "	Trustees' expenses	19 00
21	45	Alston Ellis	" "	" "	20 00
21	46	Chas. A. Barton, Agent	Expense Virginia Military Land	Virginia Military Land	439 05
21	47	S. H. Ellis, Chairman Farm Com	Use of farm	Farm expenses, etc	1,200 00
22	48	J. H. Anderson	Expense of special police	Current expenses	5 00
24	49	Prof. Mathew	Materials for his department	Department supplies	4 05
24	50	H. S. Babbitt, Treasurer	Salary two months	Salaries	66 67
			Paid expenses of trustees	Trustees' expenses	20 00
			Postage, etc	Current expenses	4 00
25	51	E. E. Corwin	Care of arms	" "	4 00

25	52	Miss Williams	Salary for June	Salaries	45 00
25	53	Kershaw, Krauss & Putnam	Carpet for assembly room	Furniture and apparatus	19 00
26	54	S. H. Short	Repairing gas pipes	Farm expenses, etc	9 43
27	55	Taylor & O'Harra	Carriage for Gov. Bishop at commenc't	Commencement expenses	5 00
29	56	Prof. Townshend	} Balance farm account } Purchase of cattle	Farm expenses, etc " "	183 99 225 00
July 1	57	M. Dillon	} Salary for June } Night-work	Salaries Current expenses	37 50 7 00
8	58	Kilbourne, Jones & Co	Hardware	" "	50
10	59	Nevins & Myers	Stationery and printing	" "	102 70
12	60	F. F. Hoffman	Legal services	" "	3 00
12	61	McCune, Mithoff & Co	Tools, fixtures, Physical departm't	Department supplies	14 53
12	62	J. W. Jordan	Carpenter work	Current expenses	13 75
16	63	M. Dillon	Salary for July	Salaries	23 00
17	64	Freemans, Staley & Morton	Supplies for military department	Department supplies	2 00
19	65	Scioto Boiler Works	Repairing gas-works	Farm expenses, etc	34 45
19	66	J. A. Rea, Agent	Insurance	Current expenses (I)	325 00
19	67	Lind & Newfang	Repairing roof	Farm expenses, etc	13 00
22	68	S. H. Baughman	Repairing pumps	" "	17 10
25	69	H. S. Babbitt, Treasurer	Paid trustees' expenses July 9	Trustees	53 30
26	70	Prof. Church	Materials for mining department	Department supplies	100 25
27	71	Columbus Transfer Co	Freights	" "	1 29
27	72	Cott & Haun	Printing	Current expenses	34 50
31	73	President Orton	Paid for advertising	" "	162 25
Aug. 1	74	W. S. Furay & Co	Paid for advertising	Current expenses	2 25
3	75	Comly & Francisco	"	"	5 25
3	76	Columbus Transfer Co	Freights	Department supplies	75
3	77	F. D. Prouty	Lawn mower	Farm expenses, etc	14 00
3	78	F. D. Prouty, agent	Insurance	Current expenses (I)	75 00
3	79	M. Dillon	Balance July salary	Salaries	15 50
3	80	Sunday Capital	Advertising	Current expenses	1 50
5	81	Sunday News	"	"	2 25
8	82	President Orton	Paid for diplomas	Commencement	57 00
10	83	Tyler & Allen	Work on boarding-hall	Farm expenses, etc	71 40
10	84	J. W. Jordan	Carpenter work	"	7 62
12	85	H. Bancroft, agent	Insurance	Current expenses (I)	87 50
14	86	I. B. Potts	Tools	Department supplies	30 00
14	87	same	Repairing steam pipes, etc	Farm expenses, etc	30 26
15	88	J. Herman	Painting boarding-house	"	75 00
19	89	J. F. Linton	Advertising	Current expenses	5 25
23	90	Geo. W. Gleason, (estate)	Books for library	Library	9 70
26	91	Stitt, Price & Co	Lime for gas-making	Current expenses	4 03

Date.	Number of order.	To whom paid.	For what purpose.	From what appropriation.	Amount.
1878.					
Aug. 26	92	President Orton	Expenses	Current expenses	$54 40
26	93	J. & G. Butler	Cement for repairs	Farm expenses, etc	4 15
31	94	Evening Dispatch	Advertising	Current expenses	7 50
Sept. 5	95	W. A. Shoemaker	136½ tons coal	"	237 87
9	96	McCune, Mithoff & Co	Hardware	Farm expenses, etc	24 27
12	97	T. J. Godfrey	Expenses as Trustee	Trustees	14 30
12	98	Stephen Johnston	"	"	7 50
12	99	J. B. Jamison	"	"	9 50
14	100	W. L. Turner	Account rendered	Current expenses	7 84
14	101	J. A. Church	Sundries for his department	Department supplies	125 00
14	102	M. Dillon	Salary for August	Salaries	37 50
18	103	Martin Conner	Helping janitor	Current expenses	21 25
18	104	E. M. Van Harlingen	Insurance	" (I)	71 00
20	105	E. E. Corwin	Care of arms	"	2 25
21	106	G. Schatzman	Drayage	"	2 00
24	107	Columbus Gas Co	Repairing gas-works	Farm expenses, etc	4 00
24	108	President Orton	Salary for September	Salaries	275 00
25	109	William Conrey	Work for Physical Department	Department supplies	6 00
27	110	Prof. S. W. Robinson	Salary for September	Salaries	225 00
27	111	" Townshend	"	"	225 00
27	112	" Church	"	"	225 00
27	113	" Tuttle	"	"	225 00
27	114	" Millikin	"	"	225 00
27	115	" McFarland	"	"	225 00
27	116	" Norton	"	"	225 00
27	117	" Smith	"	"	150 00
27	118	" Mathew	"	"	85 00
27	119	" Lomia	"	"	50 00
27	120	" Williams	"	"	55 00
27	121	Ruisinger & Bro	Work for Mechanical Department	Department supplies	52 13
27	122	same	Repairs	Farm expenses, etc	4 17
Oct. 1	123	P. Hayden	Coal for Mechanical Department	Department supplies	4 75
4	124	Hershiser & Gibson	Lumber for Mechanical Department	"	18 04

4	125	William Halley	Plumbing for Chemical Laboratory. Repairs		"	122 66
5	126	S. H. Short	Supplies for Physical Laboratory		Farm expenses, etc	44 44
5	127	E. B. Armstrong	Repairing roof		Department supplies	9 17
5	128	J. Herman	Painting		Farm expenses, etc	18 65
5	129	M. Dillon	Salary for September		"	65 71
7	130	J. Sullivant, Secretary	3 months' salary		Salaries	60 00
7	131	Siebert & Lilley	Blank-book and binding		"	125 00
14	132	J. R. Bartley, agent	Bryant's History United States.		Current expenses	35 25
15	133	J. N. Horne	Music for commencement		Library	7 50
15	134	M. Dillon	On account of salary for October		Commencement	30 00
18	135	H. S. Babbitt, Treasurer	Salary Expenses		Salaries	5 00
18	136	J. S. Sullivant, Secretary	Salary 1 month		"	150 00
21	137	McCune, Mithoff & Co	Hardware for Mechanical Department		Current expenses	8 87
22	138	President Orton	Salary for October		Salaries	41 66
22	139	Prof. Robinson	"		Department supplies	65 50
22	140	" Townshend	"		Salaries	275 00
22	141	" Church	"		"	225 00
22	142	" Tuttle	"		"	225 00
22	143	" Millikin	"		"	225 00
22	144	" McFarland	"		"	225 00
22	145	" Norton	"		"	225 00
22	146	" Smith	"		"	225 00
22	147	" Mathew	"		"	150 00
22	148	" Williams	"		"	85 00
22	149	" Lomia	"		"	55 00
22	450	Nevins & Myers	"		"	50 00
			Printing		Current expenses	45 20
			Advertising		"	13 75
22	151	President Orton	Commencement expenses		Commencement	3 60
			Postage, etc		Current expenses	12 68
	152	M. F. Morrison	Salary as librarian		Salaries	25 00
24	153	William Halley	Plumbing for Chemical Laboratory. Repairs		Department supplies	10 93
					Farm expenses, etc	45 47
25	154	W. M. Savage	Tools		Department supplies	12 90
31	155	M. Dillon	Janitor for October		Salaries	60 00
Nov. 7	156	Chas. A. Barton, agent	Services and expenses, Vir. Mil. Land.		Virginia Military Land	310 42
7	157	Kilbourne, Jones & Co	Hardware for Mechanical Department		Department supplies	195 63
8	158	Allston Ellis	Expenses as Trustee		Trustees	12 00
8	159	S. H. Ellis	"		"	11 85
8	160	T. J. Godfrey	"		"	16 80
8	161	Stephen Johnston	"		"	10 00

DETAILED ACCOUNT OF PAYMENTS MADE, ETC.—Continued.

Date.	Number of order.	To whom paid.	For what purpose.	From what appropriation.	Amount.
1878.					
Nov. 8	162	N. H. Edgerton	Sundries for Mechanical Department	Department supplies	$59 00
8	163	Miller, Green & Joyce	Sundries for College	Current expenses	4 30
11	164	Columbus Transfer Co	Freight	"	1 35
12	165	J. Sullivant, Secretary	Postage and other expenses	"	10 00
12	166	same "	Salary to 15th	Salaries	41 66
12	167	Hope Machine Works	Models, etc., Mechanical Department	Department supplies	27 10
12	168	Anton Brun	" "	"	14 75
12	169	Ruisinger & Bro	Cases for Mechanical Department	Furniture and apparatus	62 80
		same	Blackboards for College	Current expenses	24 06
		Total disbursements			$36,008 74

Total receipts, as shown by Statements I and IV	$37,991 03
Total disbursements, as above	36,008 74
Cash balance on hand	$1,982 29

HENRY S. BABBITT, *Treasurer.*

REPORT OF FINANCE COMMITTEE.

COLUMBUS, OHIO, *November* 28, 1878.

The account and vouchers of the Treasurer have been examined and approved.
By order of the Finance Committee:

T. EWING MILLER, *Chairman.*

REPORT OF FARM SUPERINTENDENT.

N. S. TOWNSHEND, M.D., *Professor of Agriculture:*

DEAR SIR: Under your direction, the following experiments have been made on the University farm during the past year:

1. Two experiments in hog-feeding, which were designed as inquiries as to the feeding value of dry ear-corn, and as to the form in which Indian corn may be most profitably fed.
2. A series of experiments in the use of certain chemical fertilizers.
3. A series of experiments in deep plowing.

1. HOG-FEEDING.

(*a.*) Thirteen hogs had been fed so as to fatten slowly during the fall of 1877, until, on the 1st of December, they weighed 4,660 pounds, averaging 358½ pounds. From that time their corn was weighed out to them at every feed, and the hogs were weighed at the end of every week, as shown by the following table, which gives the total weight and the average weight at the end of each week; the total increase for the week, and the increase of live weight for each bushel of corn consumed, counting seventy pounds of ears to the bushel:

TABLE NO. 1.

Week ending—	Total weight.	Average weight.	Total gain.	Bushels corn consumed.	Gain per bushel.
December 8	4862	374	202	15.50	13.00
" 15	5012	385¼	150	15.50	9.68
" 22	5096	392	84	14.70	5.70
" 29	5268	405¼	172	13.36	12.85
January 5	5330	410	62	13.57	4.56
			670	72.63	9.22

If we average the first, second, and third weeks, we shall find that each bushel of corn made 9 54-100 pounds of pork. Taking the second, third, and fourth weeks, we find a yield of 9 32-100 pounds per bushel.

Taking the third, fourth, and fifth weeks, the average product is 7 63-100 pounds per bushel, while the table shows also a decrease in the consumption of corn, thus showing that the hogs not only ate less corn as they approached maturity, but that they also utilized less of what they did eat.

(*b.*) On the 11th of January, 1878, sixteen young hogs, about eight and a half months old, and weighing 3,192 pounds, an average of 199½ pounds, were put in the pen from which the previous lot had been taken, and fed during the following week 17 3-10 bushels of corn, from which they made a total gain of 166 pounds, or 9 6-10 pounds to the bushel of grain. They were then separated into four lots, as nearly equal in apparent thrift as possible, and treated as follows:

Lot No. 1 was fed twice a day on dry ear-corn, care being taken never to give more than would be eaten clean before the next feed.

Lot No. 2 was fed in such a way that corn was constantly within reach.

Lot No. 3 was fed twice a day, on corn shelled and boiled until the kernels burst open.

Lot No. 4 was fed twice a day on corn-meal thoroughly scalded and slightly fermented.

Table No. 2 shows the weight of each lot at the beginning of the experiment; the amount of food consumed per week (allowing 68 pounds of ear-corn, or 56 pounds meal or shelled corn to the bushel); the gross increase of live weight, and the increase for each bushel of corn consumed for each lot, and for the average of the four lots, during each week of the experiment. The weights are given in pounds and hundredths; the corn in bushels and hundredths. A column showing the mean temperature for each week, as recorded by Edward Orton, Jr., is also appended:

TABLE No. 2.

Week ending—	Lot 1, weight 880.			Lot 2, weight 798.			Lot 3, weight 846.			Lot 4, weight 834.			Average gain per bushel.	Temperature.
	Gain.	Corn consumed.	Gain per bushel.	Gain.	Corn consumed.	Gain per bushel.	Gain.	Corn consumed.	Gain per bushel.	Gain.	Corn consumed.	Gain per bushel.		
January 26...	28	4.01	6.98	46	5.10	9.00	.....	4.75	.....	33	3.38	9.77	8.58	38.76
February 2...	30	3.83	7.83	26	3.83	6.79	3	1.70	1.75	49	3.60	13.60	9.41	33.16
" 9...	34	3.64	9.34	32	3.83	8.35	45	3.53	12.40	56	4.11	13.62	10.93	29.71
" 16...	32	3.50	9.70	40	4.00	10.00	30	2.94	10.20	40	4.07	9.83	9.94	35.02
" 23...	42	3.50	12.00	30	4.00	7.50	40	3.62	11.00	52	4.11	12.40	10.72	45.04
March 2...	20	3.50	5.71	28	3.60	7.80	28	3.41	8.21	40	4.30	9.30	7.75	36.38
" 9...	28	3.38	8.28	30	3.30	9.10	16	2.77	5.78	30	4.46	6.70	7.46	49.42
" 16...	29	3.13	9.26	10	3.23	3.09	28	3.00	9.33	52	4.21	12.35	8.51	55.44
" 23...	27	2.94	9.18	30	2.72	11.03	16	2.85	5.60	42	4.11	10.22	9.01	46.95
" 30...	26	2.82	9.22	34	2.56	13.28	14	3.17	4.41	20	4.28	4.67	7.89	44.85
April 6...	24	2.88	8.33	14	2.50	5.60	34	2.94	11.56	48	3.93	12.21	9.42	53.04
" 13...	30	2.78	10.79	12	2.48	4.84	20	3.00	6.67	28	3.55	7.80	7.52	59.09
Totals.....	351	39.91	.....	342	41.15	.....	274	37.68	.....	490	48.12	.....	.....	.....
Averages....	29.25	3.33	8.79	28.5	3.43	8.31	22.83	3.14	7.27	40.83	4.01	10.18	8.70	.....

The result of this experiment can be seen more readily by separating it into periods of four weeks each, as in

TABLE No. 3.

Period.	Lot 1.			Lot 2.			Lot 3.			Lot 4.			Average gain per bushel.	Average temperature.
	Gain.	Corn consumed.	Gain per bushel.	Gain.	Corn consumed.	Gain per bushel.	Gain.	Corn consumed.	Gain per bushel.	Gain.	Corn consumed.	Gain per bushel.		
1	124	14.98	8.27	144	16.76	8.59	78	12.92	5.72	178	15.17	11.73	9.71	34.16
2	120	13.51	8.81	108	14.13	6.87	112	12.80	8.58	174	17.08	10.19	8.61	46.57
3	107	11.42	9.37	90	10.26	8.77	84	11.96	7.02	138	15 87	8.69	8.46	50.98
	351	39.91	8.79	342	41.15	8.31	274	37.68	7.27	490	48.12	10.18	8.70	

In Lot No. 1 we find a steady, though irregular, decrease in the rate of gain in live weight and in the weekly consumption of food as the animals approached maturity, but an *increase* in the amount of pork produced by a bushel of corn.

In Lot No. 2 we find a still more marked decrease in consumption of food and rate of gain in live weight, with a small gain in productiveness of the food.

Lot No. 3 apparently cloyed on the first feed given, and never afterward took kindly to their food, especially when fresh cooked. After it had begun to ferment they ate it better, but never seemed to enjoy it.

In Lot No. 4 we find a state of affairs almost the reverse of that in lots 1 and 2. The amount of food consumed per week increased until after the middle of the second period, while its productiveness steadily *decreased* from month to month.

It will be seen that the difference in productiveness between a bushel of dry ear-corn as fed to lot No. 1 and a bushel ground into meal and scalded as fed to lot No. 4 was only 1 39-100 pounds, a very small margin to pay for the expense of grinding and scalding, yet the hogs receiving the scalded meal made, *in the same length of time*, nearly forty per cent. more pork than those fed on unground corn.

The object of the peculiar method of feeding lot No. 2 was to inquire as to the danger of over-feeding, after hogs have once become accustomed to full feed. It will be seen that the difference in total gain and in the proportion of food utilized between lots 1 and 2 was very small.

Even this small difference, however, and even at the low price of three and a half cents per pound gross, for the pork, gives nearly two cents per bushel in favor of regular and careful feeding.

2. EXPERIMENTS WITH SOME CHEMICAL FERTILIZERS.

(*a.*) Twenty-four plots, each containing one-twentieth of an acre, were laid out in one of the oldest meadows of the farm, and the following fertilizers were applied to alternate plots on the 11th and 12th of April, in such a manner that each fertilized plot was surrounded by those unfertilized.

The fertilizers were used in two quantities, as shown below, the amounts being the rate per acre:

Superphosphate of lime	160 and 320 pounds.
Nitrate of soda	100 " 200 "
Mixture of above	160 " 320 "
Bone meal	100 " 200 "
Common salt	200 " 400 "

The grass was cut on Saturday July 6, and put into cock that evening; but on Sunday evening and all day Monday there were heavy showers of rain, so that it could not be got into condition to haul to the barn until Wednesday. It was carefully spread out that morning, and taken in during the afternoon. The results obtained are shown by the following table, which gives the rate of yield per acre for the manured plots and for the surrounding unmanured plots, the increase in yield for each fertilizer, the value of the increase and cost of fertilizer:

TABLE NO. 4.

Kind of Fertilizer.	Yield of manured plots.	Yield of unmanured plots.	Gain for fertilizer.	Value of increase.	Cost of fertilizer.
Superphosphate	4140	3860	280	$0 84	$6 00
Nitrate of soda	5140	4460	680	2 00	7 50
Mixture	5060	4960	100	30	9 00
Bone meal	5000	4720	280	84	3 75
Common salt	5020	3980	1040	3 12	1 40

(*b.*) Forty plots, each containing one-thirtieth of an acre, were laid out in ten rows of four plots each, in one of the poorest field of the farm, and treated as follows:

On the first row stable manure was spread, at the rate of fifteen cords to the acre; the land was then plowed, and swamp muck applied to two of the plots in the second row at the rate of sixty cords to the acre, and air-slacked lime to a third row at the rate of sixty and one hundred and twenty bushels per acre. The whole was carefully leveled and harrowed, and on the 18th of April planted with sugar beets, the seed being sown with a Comstock drill, in rows thirty inches apart, and at the rate of five pounds to the acre. The following fertilizers were immediately sown on the rows of alternate plots, each fertilizer except common salt being applied in two quantities:

Superhosphate of lime, at the rate of	180	and 360	lbs. per acre
Nitrate of soda, at the rate of	150	" 300	"
Mixture of the above in equal quantities, at the rate of	180	" 360	"
Bone meal, at the rate	150	" 300	"
Common salt	---	300	"

All the plots received as nearly as possible the same after culture.

The beets were harvested and weighed on the 19th and 26th of October, and the following table shows the rate of yield for each kind of fertilizer, that of the surrounding unmanured plots, the rate of gain and its value, and the cost per acre of application of fertilizer, as before:

TABLE NO. 5.

Kind of Manure.	Yield of manured plots.	Yield of unmanured plots.	Increase for manure.	Value of increase.	Cost of fertilizer per acre.
Stable manure	39,000	20,260	18,740	23 45	$15 00
Swamp muck	26,340	20,260	6,080	7 60	15 00
Superphosphate	22,940	18,240	4,700	5 87	6 75
Nitrate of soda	30,800	19,280	11,520	14 40	11 25
Mixture	30,560	18,340	12,220	15 27	10 25
Bone meal	18,000	15,860	2,140	2 67	5 62
Common salt	24,900	14,760	10,140	12 67	1 40
Lime	18,440	17,260	1,100	1 37	3 60

It will be seen that the greatest actual increase came from the stable manure, while the greatest increase in proportion to cost of fertilizers came from the common salt.

The larger quantity of each fertilizer, except the lime, seemed to produce a larger increase of crop, but in no case, except that of the nitrate of soda, and the mixture of that and superphosphate was the additional increase sufficient to pay for the extra cost of the fertilizer. The larger application of lime was apparently injurious.

(*c*) By the side of the plots of beets a like amount of land was set apart for corn, receiving the same preparation as that devoted to the beets, except that it had an extra stirring with the cultivator just before planting time. It was planted on the 11th of May, with Clinton corn, the ground being marked both ways, and the corn dropped and covered by hand. The fertilizers were dropped upon the covered hills of corn in small handfulls, and the residue of each portion sown broadcast over the whole plot. The same quantities of fertilizers were used as in the previous experiment. The results are shown in the following table:

TABLE NO. 6.

Kind of Manure.	Yield of manured plots.	Yield of unmanured plots.	Increase for manure.	Value of increase.	Cost of fertilizer.
Stable manure	75.74	61.80	13.94	$4 18	$15 00
Swamp muck	77.91	61.00	16.91	5 07	15 00
Superphosphate	58.07	55.50	2.57	77	6 75
Bone meal	50.44	45.10	5.33	1 60	5 62
Common salt	61.50	57.10	4.40	1 32	1 40
Lime	64.15	57.93	6.22	1 86	3 60

The swamp muck used in these experiments was found on the farm, and was composed of the following constituents, as analyzed by Mr. J. S. Humphreys, a student at the University:

Water	59.131 per cent.
Organic matter	30.473 "
Silica	5.245 "
Lime, iron, and alumina	5.022 "

3. DEEP PLOWING FOR CORN AND BEETS.

(*A*) In a field of first and second bottom—the first bottom being a timothy sward which had recently been under cultivation, the second bottom an old pasture lot—a strip of land the width of twenty-four rows of corn was plowed twelve inches deep with a double plow drawn by four horses working abreast.

On each side of this strip the field was plowed eight inches deep with three-horse teams and single plows.

At husking time five shock-rows of twelve corn-rows each were carefully weighed, with the following results:

First row, south of deep plowing, yielded	63.24	bushels per acre.
Second row, deep plowed, yielded	77.64	"
Third row, " "	76.50	"
Fourth row, north of deep plowing, yielded	71.44	"
Fifth row, " " "	74.88	"
Average yield for ordinary plowing	69.89	"
" " deep plowing	77.07	"

(*B*) In a field of bottom land which had been several years in cultivation, a strip the width of one shock-row was subsoiled about thirteen inches deep, by turning eight inches of the surface with an ordinary plow, and stirring five inches deeper with a subsoil plow. On each side of this strip the field was plowed eight inches deep with single plows. The result was as follows:

First row, west of subsoiled row, yielded	47.46	bushels per acre.
Second row, subsoiled, yielded	48.47	"
Third row, east of subsoiled row, yielded	54.69	"
Fourth row, " " "	57.69	"

(*C*) In a portion of second bottom two strips were subsoiled as above, the remainder of the field being plowed the usual depth. Across both strips sugar beets and corn were planted. The results were as follows:

(*a*) Beets—		
Yield for ordinary plowing	8¼	tons per acre.
Yield for subsoiling	9¾	"
(*b*) Corn—		
Yield for ordinary plowing	55.37	bushels per acre.
Yield for subsoiling	49.28	"

Respectfully yours,

C. E. THORNE.

COLUMBUS, OHIO, *November* 15, 1878.

S. H. ELLIS, Esq., *Chairman of Farm Committee Ohio State University:*

DEAR SIR: I have the honor to submit herewith a report of the management of the University Farm for the ten months ending November 15, 1878.

FARM CROPS.

The farm contains in all three hundred and twenty acres. Thirty-five acres are occupied by the main and secondary channels of the Olentangy River, twenty-one acres are at present contained in the University lawn, fifteen acres are in woodland, and twenty in the lots attached to the professors' houses, boarding halls, tenant houses, and barn lots, leaving two hundred and twenty-nine acres in pasturage and cultivation. Of this amount, ninety-four acres have been in meadow the past season, forty-six in pasture, forty-five in corn, twenty-five in wheat, thirteen in oats, four in potatoes, one in rye, and one in sugar beets.

The following is a detailed statement of the cost of culture and value of produce of each of the above crops:

CORN.

1. Twelve acres of the east end of No. 15 were planted with corn for the fourth consecutive season, the drainage of the muck bed in this field not having been sufficiently accomplished to justify seeding it sooner. The account with the field is as follows:

Dr.

LABOR.	Hours of men.	Hours of team.	Cost.
Plowing and harrowing	114	114	$28 50
Marking, planting, and replanting	46	16	7 75
Cultivating	103	66	24 12
Hoeing and thinning	90	.....	12 75
Cutting	123	.....	15 45
Husking	188	.....	23 60
Hauling to crib	30	30	7 50
Total cost	594	226	$119 67

Cr.

555 bushels corn, at 28c	$155 40	
250 shocks fodder (12 hills square), at 7c	17 50	
Total return	$172 90	
Value above cost	53 23	
Net profit per acre	4 42	
Net cost per bushel		18 4-10

(Obtained by deducting value of fodder from total cost of crop.)

2. *Field No.* 3.—This field was in corn last year. Five and one-half acres were devoted to experimental plots and to potatoes. The following is the account with the remaining eight and one-half acres:

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Plowing, harrowing, and planting	130	118	$31 00
Cultivating	87	87	22 28
Hoeing	68	.....	8 42
Cutting	86	.....	10 78
Husking	117	.....	14 60
Hauling to crib	28	28	7 00
Total cost	516	233	$94 08

Cr.

450 bushels corn, at 28c	$127 00
180 shocks fodder, at 7c	12 60
Total return	$139 60
Value above cost	45 52
Net profit per acre	5 35
Net cost per bushel	18 1-10

3. *Field No.* 14.—Two irregular patches, containing together seven and one-half acres, were cultivated on the island, with the following results:

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Clearing, plowing, and harrowing	103	100	$25 37
Marking, planting, and replanting	53	22	9 38
Hoeing and thinning	61	.....	9 25
Cultivating	85	77	21 10
Harvesting	210	40	31 25
Total cost	512	239	$96 35

Cr.

495 bushels corn, at 28c	$138 60
160 shocks fodder, at 7c	11 20
Total return	$149 80
Value above cost	53 45
Net profit per acre	7 13
Net cost per bushel	17 2-10

4. *Field No.* 11.—Eleven acres of this field were of first bottom, which had been in grass one season, but was not well set; six acres were an old, upland pasture lot.

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Plowing and harrowing	162	195	$44 62
Planting and re-planting	53	25	11 00
Rolling	23	30	6 62
Cultivating	84	84	22 55
Hoeing and thinning	125	.....	21 83
Cutting	173	.....	21 60
Husking	288	.....	36 00
Hauling to crib	70	70	17 50
Total cost	978	404	$181 72

Cr.

1,200 bushels corn, at 28c	$336 00
355 shocks fodder, at 7c	24 85
13 tons pumpkins, at $2.00	26 00
Total return	$386 85
Value above cost	205 13
Net profit per acre	12 06
Net cost per bushel	10 9-10

WHEAT.

1. Twelve and three-fourths acres of the west half of field No. 10, bottom land, had been sown with Clawson wheat on the 17th of September, 1877, following oats. The wheat was cut on the 1st and 2d of July. The cost and return were as follows:

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Plowing	114	114	$34 25
Manuring	127	50	24 68
140 loads manure, at 25c	.....	.....	35 00
Stirring and harrowing	48	48	14 25
Drilling	15	15	4 50
16½ bushels seed, at $1.75	.....	.....	30 44
Harvesting	205	37	38 17
Threshing	200	78	43 56
Expense of threshing	.....	.....	22 64
Cleaning and marketing	119	14	16 62
Total cost	828	356	$264 11

Cr.

444 bushels wheat	$462 50
25 tons straw	37 50
One-third cost of manuring, charged forward	19 89
Total return	$519 89
Value above cost	255 78
Net profit per acre	20 06
Net cost per bushel	46

2. Eleven and one-fifth acres of the west half of field No. 15, bottom land, had been sown with Lancaster wheat on ten acres, and Golden Straw and Silver Chaff on two-fifths of an acre each, on the 24th of September, 1877, following corn. The cost and return of the crop were as follows:

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Cultivating and harrowing	37	37	$11 10
Drilling	15	15	4 50
17 bushels cleaned seed, at $1.27	----	----	21 55
Harvesting	220	45	42 41
Threshing	305	130	69 18
Expense of threshing	----	----	12 80
Marketing	30	10	5 60
Total cost	607	237	$167 14

292 bushels wheat	$250 72
22 tons straw	33 00
Total return	$283 72
Value above cost	116 58
Net profit per acre	10 41
Net cost per bushel	46

3. Four-fifths of an acre in the farm-house lot was sown with Velvet Chaff wheat on the 1st of October, and harvested June 25th.

Labor.	Hours of men.	Hours of team.	Cost.
The total cost was	64	31	$17 00
The total product was	----	----	19 25

Making a total yield of 756 bushels from 24¾ acres; an average of 30½ bushels, or 26 bushels after corn, and 34 4-5 bushels after oats.

OATS.

Nine acres of the east half of field No. 7 (upland sod) were plowed during the winter, and sown with oats on the 22d and 23d of March; four acres of the lawn north of the College buildings were sown April 13th. Both lots were stacked and threshed together. The account with this crop is as follows:

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Plowing and harrowing	130	130	$36 50
Drilling	17	17	4 85
30 bushels cleaned seed			9 75
Stacking	88	29	14 62
Threshing	106	8	16 65
Expense of threshing (machine, board, and coal)			14 52
Total cost	341	184	$96 89

Cr.

525 bushels oats, at 20c	$105 00
13 tons straw, at $1.50	19 50
Total return	$124 50
Value above cost	27 61
Net profit per acre	2 12½
Net cost per bushel	14¼

RYE.

Four-fifths of an acre in field No. 15 (corn land) was sown with rye on the 25th of September. The cost and return were as follows:

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Plowing, sowing, and harvesting	32	16	$6 65
Value of seed			75
Threshing by hand	65		8 17
Total cost	97	16	$15 57

Cr.

28 bushels rye, at 50c	$14 00
10 dozen bundles straw, at 50c	5 00
Total return	$19 00

SUGAR BEETS.

The beets were grown as an experiment, and are reported as such to the Professor of Agriculture.

POTATOES.

A portion of the potatoes was grown for the purpose of testing the effect of different fertilizers, but the experiment was lost through defective seed. Another portion was planted among the large trees in field No. 3. Consequently no figures can be given which will be of any value.

MEADOWS.

Ninety-four acres were in meadow, but about five acres were completely taken with "White top," in field No. 6, and several of the other fields were more or less injured by it, while in some of the fields the timothy had been almost driven out by blue grass.

The account with the meadow is as follows:

Dr.

Labor.	Hours of men.	Hours of team.	Cost.
Manuring No. 7 in fall of 1877	142	60	$28 50
110 loads manure at 25c			27 50
Reseeding and sowing plaster in No. 6	11	7	3 57
Harvesting	1650	544	339 65
Total cost	1803	611	$399 22

Cr.

150 tons hay, at $5.00	$750 00
Pasturage of aftermath	125 00
One-third cost of manuring, charged forward	18 66
Total return	$893 66
Value above cost	494 44
Net profit per acre	5 26
Net cost of hay per ton	1 70

PERMANENT PASTURES.

1. Nos. 1 and 2, containing thirty acres, were pastured together. Their yield has been as follows:

Keeping 3 three-year old steers 6 months, at $1.50	$27 00
" 8 two-year old " 7 " $1.00	56 00
" 7 yearling steers and heifers 7 months, at 75 cents	36 75

Keeping 5 winter calves 5 months, at 40 cents	$10 00
" 4 April calves 3 months, at 30 cents	3 60
" 1 heifer 3 months, at $1.00	3 00
" 2 horses 2 months, at $2.00	8 00
" 104 sheep ¼ month, at 10 cents	3 46
Half pasture for 3 horses 8 months, at $1.00	24 00
Total returns	$171 81
Return per acre	5 72

These figures include the November pasturage. The prices are based upon the increase in weight of the cattle while on the pasture. A large per cent. of the product of No. 2 was lost for want of stock to consume it at the proper time.

2. *No. 8.*—One acre of this field was set off for use of Boarding Hall. the return of the remaining sixteen acres was as follows:

Keeping 10 cows 5½ months, at $1.50	$82 50
" 1 cow 2½ months, at $1.50	3 75
Night pasture for 6 horses 5 months, at 50 cents	15 00
" " 110 sheep 2½ months, at 2 cents	5 00
Pasturing 30 hogs, partly corn-fed, at 6⅔ cents	10 00
Total return	$116 25
Return per acre	7 26

The principal results obtained from the cultivation of the above crops are shown in the following

SUMMARY OF CROPS.

Kind of Crop.	Acres.	Average yield.	Total yield.	Total value.	Total cost.	Cost per acre.	Profit p'r acre.
Corn	45	60 bush.	2700 bush.	$849 15	$491 82	$10 93	$8 06
Wheat	25	30 "	756 "	822 86	448 25	17 42	15 04
Oats	13	40 "	525 "	124 50	96 89	7 45	2 12
Hay	94	1 6-10 tons.	150 tons.	893 66	399 22	4 24	5 26
Pasture	46	.....	.....	288 06	.....	.....	6 74
Minor crops	6	.....	.....	140 00	140 00	.....	.....
Totals and avg's	229	.....	.....	$3,118 23	$1,576 18	$10 01	$7 44

To the direct cost of production, as given above, should be added the sum of $292.38 for general farm expenses, such as repairs of fences, marketing such of these crops as have been sold, care of stock, etc., making a total outlay of $1,868.56, and leaving a balance for profit and superintendence of $1,249.67.

DAIRY.

The following summary shows the operations of the dairy department of the farm from April 1 to November 1:

Dr.

7 cows and heifers on hand April 1	$305 00
3 calves on hand April 1	15 00
Utensils on hand April 1	8 00
1 bull purchased	80 00
5 cows purchased	285 00
4 calves purchased	12 50
Utensils purchased	8 30
Keeping bull 5½ months, at $3.00	16 50
Pasturing cows 65 months, at $2.00	130 00
Milking and marketing	183 30
Use of horse 7 months, at $3.00	21 00
Total	$1,064 60

Cr.

12 cows on hand November 1	$610 00
1 bull on hand November 1	80 00
5 calves on hand November 1	34 00
Utensils on hand November 1	15 80
1,154 gallons milk sold	231 92
610 gallons skim milk fed to pigs	18 30
145 pounds butter sold	21 22
8 calves	94 00
Bull services	9 00
Total	$1,115 24

These seven months include the summer vacation, during which the sales of milk were reduced one-half. The profits of the dairy are chiefly to be found in the incidental items of the production of good calves to keep up our stock of cattle, in the profitable marketing of the pasturage and rough feed of the farm, in the additions to the manure heap, and in the profitable employment of a considerable amount of student labor.

FARM IMPROVEMENTS.

Between April 1, 1877, and November 1, 1878, there has been a total expenditure for material for farm improvements of $1,097.47. The labor of the farm, inclusive of teams, has been applied to the construction of these improvements to the amount of $1,049.24, making a total cost of $2,146.71.

The following is a detailed statement of the purposes for which the above sums have been expended:

1. A piggery, containing corn cribs and wagon shed, was erected west of the barn at a cost—

For material	$280 00
For labor	138 43
Total	$418 43

This building is 20x61 feet in size, contains seven pens 8x10 feet, and one 5x8 feet, with yards attached, has crib room for 1,200 bushels of corn, besides meal bins, feed-rooms, etc.

2. A work-shop and tool-house, 18x30 feet in size, two stories high, was added to the barn, in the form of a wing, costing—

In material	$190 55
In labor	122 00
Total	$312 55

3. A substantial bridge was made across the brook in the barn-lot, costing—

In material	$20 00
In labor	83 48
Total	$103 48

It was necessary to straighten the brook, which involved considerable extra labor in digging and filling.

4. The stabling in the basement of the barn was very inconveniently arranged, and only capable of accommodating seven or eight head of cattle. The old stalls were torn out, new floors laid, the feed-room doubled in size, a new box made for the bull, a lean-to erected in one of the angles of the barn, making a room 16 by 18 feet in size for young calves, etc., and additional stalls put in, making room for seventeen cows, besides bull and calves. The cost of this change has been—

In material	$51 80
In labor	35 97
Total	$87 77

5. A coal-shed was added to the farm-house costing—

In material	$21 55
In labor	14 30
Total	$35 85

6. A hen-house was built at the barn costing—

In material	$13 00
In labor	5 50
Total	$18 50

7. The road from the barn to the extension of Neil avenue was graded and graveled, and paths made in other places, at a cost in labor of $63.30.

8. Labor was expended in the grading and improvement of Woodward avenue to the amount of $29.55.

9. One hundred and fifty-two rods of tile drains were made in the south-east field of the farm at a cost—

For tile of	$71 50
For labor	77 50
Total	$149 00

10. A system of tile drains of an aggregate length of 135 rods was made in the north-eastern part of the farm, beginning in the field north of the President's house, and extending through the field between that house and the University buildings and the eastern side of the lawn. This improvement cost—

In tile	$83 70
In labor	88 20
Total	$171 90

Thirty-five and a half rods of this drain were laid with eight-inch tile through a stony slope where the digging was very difficult.

11. The drains in the south-west portion of the farm were found insufficient to accomplish the purpose for which they were made, owing to the flow of water being greater than was anticipated. The outlet had been also obstructed by the roots of trees penetrating the joints between the tiles. Fifty rods of six-inch tile were taken up (for a portion of the distance fro n under six to eight feet of earth), the drain was dug deeper and relaid with eight inch tile, the portion which had been obstructed by roots being laid with glazed socket tiles, and the joints cemented. Seventy-seven rods of laterals were also made, being dug from four to six feet deep, in order to sink the tiles to the bottom of the stratum of gravel which was carrying the water under the old tiles and into the muck bed. This improvement cost—

In tile	$95 55
In labor	115 11
Total	$210 66

12. Two hundred and ten rods of new board fence have been built; three more boards have been added to ninety rods of two-board fence;

one hundred rods of rail fence have been re-set and staked; three substantial water-gates have been made in the barn lots, and seven new gates made for other parts of the farm. These improvements have cost—

In material	$233 07
In labor	128 80
Total	$361 87

13. An ice-room was constructed in one end of the barn cellar costing—

In material	$19 00
In labor	14 63
Total	$33 63

One-half of this improvement is chargeable to the University.

14. A milk-room was made in one end of the farm-house cellar which cost—

In material	$17 75
In labor	25 70
Total	$43 45

15. Labor has been expended in minor improvements as follows:

In digging stumps	$5 50
In gathering stones from the fields	12 24
In improving water-courses	16 62
In filling washouts	34 25
In transplanting trees	11 70
In miscellaneous items	26 46
Total	$106 77

SUMMARY OF RECEIPTS AND EXPENDITURES FROM JANUARY 1, TO OCTOBER 31, 1878.

Receipts.

From 1 horse sold	$35 00	
" 13 cattle sold	586 19	
" 43 hogs "	441 36	
" 102½ bushels corn sold	39 42	
" 278 " oats "	71 23	
" 719¼ " wheat sold	685 45	
" 59 1-5 " potatoes sold	24 28	
" 131¼ tons hay "	1,345 60	
" 1608 gallons milk "	332 19	
" 149 pounds butter "	21 70	
" pasture and feed "	60 50	
" rents and miscellaneous sales	197 00	
" from University Funds	1,426 14	
Total receipts		$5,299 68

Expenditures.

For 1 draft mare and colt purchased	$200 00	
" 4 calves purchased	12 00	
" 13 pigs "	60 00	
" implements "	309 87	
" materials for permanent improvements purchased	641 03	
" current expenses (including superintendence, pressing and shipping of hay, threshing of grain, and all cash expenses of marketing crops)	1,641 90	
For student labor employed	835 29	
" other labor "	1,497 88	
Balance on hand	101 71	
Total expenditures		$5,299 68
To the amount paid for labor as above, $2,233.17, should be added amounts due on accounts, $108.02	$2,441 19	
Value of labor expended in preparation for crops of 1878 previous to November 1, 1877	116 00	
Value of labor of farm teams for year	686 81	
Total		$3,244 00

This amount has been expended as follows:

In care of lawn, and other work for the University	$213 68	
In construction of permanent improvement	336 92	
In work for private parties, paid in cash and produce	120 69	
In expenses connected with crops of 1877	345 08	
" " " 1878	292 38	
In direct production of crops of 1878	1,576 18	
In preparation for crops of 1879	359 07	
Total		$3,244 00

The farm is under obligations to the following persons and firms for favors:

To Charles S. Burns, Cincinnati, Ohio, apparatus for heating water and cooking food for stock.

To Whiteley, Fassler & Kelly, Springfield, Ohio, 25 per cent. off price of New Champion Mower.

To P. P. Mast & Co., Springfield, Ohio, exchange of grain drills.

These implements have all been used with the greatest satisfaction.

The foregoing is respectfully submitted.

C. E. THORNE, *Farm Manager.*

RECORD OF PROCEEDINGS

OF THE LAST MEETING OF THE BOARD OF TRUSTEES OF THE AGRICULTURAL AND MECHANICAL COLLEGE.

COLUMBUS, OHIO, *November* 21, 1877.

This day the Board of Trustees of the Ohio Agricultural and Mechanical College met at 10 o'clock A.M.

On calling the roll, the following members were found to be present, to-wit: Gaither, Kinsinger, Schneider, Deuel, Jones, Noble, Sullivant, Glazier, Cornell, Horr, Ensign, and Streator—12.

Absent—Falconer, Finley, Scott, Leete, Caldwell, Mackey, Jamison, and Hoover—8.

A quorum being present, the Board was called to order.

The Secretary presented the annual reports of the Trustees, Treasurer, President, and Professors for consideration.

On motion, the Board adjourned to meet at half-past one o'clock P.M., in the portrait room of the Governor's office.

AFTERNOON SESSION.

Board met at half-past one o'clock P.M , and was called to order, the same members present as in the morning, with the addition of Messrs. Jamison and Scott. Most of the afternoon was spent in reading and examining the reports.

At three o'clock P.M. it was resolved to go into an election of officers of the Board for the ensuing year. Tellers were appointed, and the ballots having been collected and counted it was found that Warren P. Noble was duly elected as President of this Board for the ensuing year, Joseph Sullivant, Secretary, for one year, and Henry S. Babbitt. Treasurer. There were likewise elected, in the same manner, and for the term of one year, the following members of the Executive Committee, to wit: T. C. Jones, A C. Deuel, Harmon Hoover, W. S. Streator, J. Sullivant, and C. Kinsinger. E. F. Ensign and J. C. Jamison were elected a committee on the Farm and Farm Management.

On motion of T. C. Jones, it was

Resolved, That to allow the Professor of Agriculture to devote his time to the proper duties of his department, he be relieved from all services in the management of the farm and the keeping of accounts, and all other matters in relation to the same, except the supervision of farm experiments, and that the farm be conducted by Mr. Thorne (now employed as foreman on the farm), subject to the direction of the committee on Farm Management, and Executive Committee.

This resolution being seconded, was duly put and carried in the affirmative, as was also the following:

Resolved, That Mr. Thorne, as Farm Manager, receive a compensation for his services, as defined by the above resolution, the sum of six hundred dollars ($600) per annum, and the use of pasture for horse and cow. The increased compensation to be given from the first of January next.

The Board then took a recess until half-past seven o'clock, P.M.

EVENING SESSION.

Board met at 7½ o'clock P.M., and a quorum being present, proceeded to business. Mr. Sullivant having made statements and submitted testimonials in favor of Mr. Church, offered the following:

Resolved, That John A. Church, Mining Engineer, be and he is hereby appointed Professor of Mines, Mine Engineering, and Metallurgy in the Ohio Agricultural and Mechanical College, at the same rate of yearly compensation as the other Professors in the College, and that his term of service date from November 1st, 1877.

The yeas and nays having been demanded, those voting in the affirmative were, Kinsinger, Schneider, Hoover, Deuel, Jones, Noble, Sullivant, Glazier, Jamison, Cornell, Horr, Ensign, and Streator—13. In the negative, none.

So the resolution was carried, and Mr. Church appointed to the vacancy caused by the death of Mr. Henry Newton.

On motion of T. C. Jones, which was carried in the affirmative, the following was adopted as one of the by-laws:

By-law. There shall be appointed by the President, at each annual meeting of the Board, a Committee on Finance, to consist of three members, who shall have charge of and report upon such matters as the Board may from time to time refer to the same, and shall also recommend, as in the judgment of said committee may be expedient, any measure that they may deem essential to the pecuniary interests of the College.

The report of the proceedings of the Executive Committee, ad interim, of the Board, were now read. Whereupon Mr. Cornell moved the following, which was adopted:

Resolved, That the proceedings of the Executive Committee, so far as reported, be and are hereby approved.

On motion, duly put, and carried in the affirmative, it was

Resolved, That members of the Faculty shall report at the end of each term the number of days they may have been absent from duty at the College, and the reason for such absences; such report to be made to the Secretary for their information.

On motion of Mr. Cornell, it was

Resolved, That the fees of students be required to be paid in advance, and that the receipt of the treasurer for the dues of the current term must be furnished by the stu-

dents to the President, before their names are entered upon the roll of students, or are admitted to the privileges of the College.

On motion of Mr. Cornell, duly put, and decided in the affirmative, it was

Resolved, that section five of the by-laws be so amended as to require of the treasurer a bond in the sum of fifty thousand dollars ($50,000), instead of $30,000.

On motion of Mr. Sullivant, duly put, and decided in the affirmative, it was

Resolved, That the following be added to the by-laws, to wit: *By-law*. It shall be the duty of the Secretary to prepare the annual report of this Board and submit it for approval and adoption at their annual meeting.

The following resolution of the College Faculty was received and laid before the Board.

At a meeting of the College Faculty, held on November 14, 1877, the following action was taken:

Resolved, That in our judgment the best interests of the College demand that the elements of algebra shall be included in the entrance examination, and that we do therefore unanimously and urgently request the Board of Trustees to restore this subject to the requirements for admission.

(Signed) J. R. SMITH, *Secretary*.

College, Nov. 14, 1877.

After discussion, Mr. Cornell offered the following, which was adopted:

Resolved, That the "elements of algebra" be restored to the requirements made of students for admission to the College.

On motion of Mr. Sullivant, duly seconded and put, it was

Resolved, That the sum of twenty-five thousand dollars ($25,000) be and is hereby appropriated from the income fund of the Ohio Agricultural and Mechanical College in the State Treasury, for the support and maintenance of said College.

At eleven P.M. the Board adjourned until half-past eight A.M. tomorrow.

COLUMBUS, *November* 22, 1877.

Board met at 8½ A.M., the foilowing members being present, to wit: Schneider, Scott, Hoover, Deuel, Jones, Noble, Sullivant, Glazier, Jamison, Cornell, Horr, Ensign, and Streator—13. A quorum being present, the Board proceeded to business.

In order to bring the benefits of the College within reach of a class of persons, especially young farmers and mechanics who are unable or indis-

posed to take a full course in College, the matter was talked over by the Faculty and Resident Trustees, and the Faculty proposed to submit a scheme for the approval and action of the Board at their annual meeting at this time. Accordingly the following scheme of the Faculty was submitted to the Board:

The scheme proposes that young men eighteen years of age and over shall be admitted to the College next term, without any examination and without being subject to military drill, to attend lectures to be delivered as follows: One each day from Professors Townshend and Tuttle; two each week from Professors Orton, Mendenhall, and McFarland, and to continue through the term. Those entering the class will be subject to College regulations, and will be required to pay the five dollar incidental fee. Finally, the establishment of the course will depend on thirty students being found ready to undertake it, and that provision be made by the Board for advertising "the course."

The matter was discussed, and Mr. Sullivant offered a resolution, which, after being amended, read as follows:

Resolved, That the above scheme of the Faculty, submitted for the consideration of the Board, is hereby approved and referred back to the Faculty, with authority to perfect the details and carry it into practical effect, provided that no other expenses be incurred than those mentioned in the communication of the Faculty.

This resolution was decided in the affirmative in due form.

The President of the Board now appointed the following persons as members of the Committee on Finance, to serve during the ensuing year, to wit: Cornell, Hoover, and Gaither.

On motion, the clause concerning the Assistant Secretary and his salary was stricken from the by-laws.

On motion of Mr. Streator,

Resolved, That the report prepared by the Secretary is hereby approved and adopted as the Seventh Annual Report of this Board.

On motion of Mr. Noble, it was

Resolved, That the Secretary be requested to remind the professors of the requirement for an inventory of property in their several departments, and request the filing of such inventory with him by January first, 1877.

On motion of T. C. Jones, it was

Resolved, That the resolution or order of this Board, made June 22, 1876, authorizing the current expenses incurred in searching out and reclaiming the Virginia Military Lands to be paid out of the fund derived from the sale thereof, etc., be and the same is hereby repealed.

On motion of T. C. Jones, it was

Resolved, That the compensation of Captain C. A. Barton, as agent for the care and sale, and all services in relation to the same, of the Virginia Military Lands, be fixed at sixty dollars ($60) per month, beginning with the time that he was engaged by the Executive Committee.

Resolved, That the Board will indemnify and save harmless President Orton and Professor Townshend, as sureties on the bond on behalf of the Board, for the safe keeping of the arms and other property of the United States that shall be in the control and use of the College, for all losses and expenses they may incur on account of such suretyship.

On motion of T. C. Jones, it was

Resolved, That the sum of two thousand dollars ($2,000) be appropriated to pay for drainage, farm buildings, and other improvements on the farm that may be made by the Executive Committee.

On motion of Mr. T. C. Jones, it was

Resolved, That the Executive Committee be requested to settle all matters connected with the contract of William H. Leete in regard to the discovery, sale, etc., of the Virginia Military Lands, with authority to compromise all claims arising under the same against the Board by the payment of such a sum as they may deem expedient, so as to relieve the Board from all obligations on account of said contract and services rendered under the same.

On motion of T. C. Jones, it was

Resolved, That the Executive Committee be authorized, at their discretion, to provide assistants in the departments of Chemistry and Physics, to be engaged in making practical analyses and other work of original research that will be of public interest and value: provided, there be money in the Treasury available for that purpose.

At one o'clock P.M. the Board adjourned *sine die*.

(Signed) WARREN NOBLE, *President*.

RECORD OF PROCEEDINGS

OF THE BOARD OF TRUSTEES OF OHIO STATE UNIVERSITY.

COLUMBUS, OHIO, *May* 16, 1878.

All the members of the new Board of Trustees of the Ohio State University met this day in the Governor's office, there being present James B. Jamison, of Cadiz, Harrison county; S. H. Ellis, of Springborough, Warren county; J. H. Anderson and T. Ewing Miller, of Columbus, Franklin county; T. J. Godfrey, of Celina, Mercer county; Stephen Johnston, of Piqua, Miami county, and Alston Ellis, of Butler county.

The Governor presented their commissions, with the terms of their appointment, as follows: James B. Jamison for one year, S. H. Ellis for two years, Stephen Johnston for three years, T. J. Godfrey for four years, Alston Ellis for five years, T. E. Miller for six years, and J. H. Anderson for seven years, after which they were sworn into office.

On motion of Alston Ellis, Stephen Johnston, of Miami county, was made temporary President.

Alston Ellis, of Butler county, was made temporary Secretary.

Mr. Miller, in behalf of Lieutenant Luigi Lomia, Professor of Military Tactics in the University, presented an invitation for the Board to visit the College building in a body, to witness the military drill at 11 o'clock.

The invitation was accepted, and the Board at once proceeded to the University grounds, and spent the remainder of the forenoon in witnessing the drill and in visiting several of the class rooms.

After inspecting the University building, the Board met in the room of the President of the institution, and afterwards adjourned to meet at the University at 3 o'clock in the afternoon.

AFTERNOON SESSION.

Pursuant to adjournment, the Board met promptly at 3 o'clock P.M., all the members in attendance.

H. S. Babbitt, Treasurer of the former Board, being present, was called upon to furnish some information regarding the finances of the Univer-

sity. J. Sullivant, Secretary of the former Board, also gave much information regarding the general management of the institution the past years.

The remainder of the session was occupied in listening to verbal reports of Dr. N. S. Townshend, Professor of Agriculture, and Mr. Thorne, Farm Superintendent.

After deciding to visit the College classes at 9½ o'clock, May 17, the Board adjourned to meet at the American Hotel at 8 o'clock P.M.

EVENING SESSION.

The Board met in the parlors of the American Hotel at 8 o'clock, as per adjournment.

On motion, it was determined to proceed to the election of a President, Executive Committee, Farm Committee, and Finance Committee.

On motion made and carried, each of the committees of the Board was made to consist of three members.

On calling the roll, the President declared that T. J. Godfrey was duly elected President of this Board for the ensuing year.

The following standing committees were then put in nomination and unanimously elected:

Executive Committee.—J. H. Anderson, T. Ewing Miller, and Stephen Johnston.
Farm Committee.—S. H. Ellis, James B. Jamison, and J. H. Anderson.
Finance Committee.—T. Ewing Miller, Alston Ellis, and Stephen Johnston.

On motion of Mr. Anderson, the President or Executive Committee was authorized to call a meeting of the Board of Trustees at any time when, in the judgment of either, such meeting was necessary to advance the interests of the University.

A communication from William Colvin was read, reciting that he was formerly Professor of Political Economy in the Ohio Agricultural and Mechanical College, and was illegally removed, while in the active discharge of his duty, by a former Board of Trustees.

The communication was laid on the table.

On motion of Mr. Johnston, it was

Resolved, That the position of Secretary of this Board be tendered to J. Sullivant for the remainder of this fiscal year, at an annual salary of five hundred dollars ($500).

Mr. Ellis, of Butler county, called for the ayes and noes on the above resolution. The vote so taken resulted as follows:

Ayes.—T. J. Godfrey, T. Ewing Miller, J. H. Anderson, S. H. Ellis, and Stephen Johnston—5.

Noes.—James B. Jamison and Alston Ellis—2.

The Secretary announced that five votes had been cast in favor of the motion, and two against it; whereupon the President declared the motion carried.

On motion, it was

Resolved, That when this Board adjourns, it be to meet at the University building to-morrow morning at 9½ o'clock.

On motion, the Board adjourned.

(Signed) ALSTON ELLIS, *Secretary pro tem.*

Read and approved.

UNIVERSITY BUILDING, COLUMBUS, *May* 17, 1878.

Pursuant to adjournment, the Board reassembled at the University building at 9½ o'clock A.M.

The whole of the forenoon was spent in visiting University classes, inspecting the building and apparatus, and in going over the farm.

The Board met for the transaction of business in the room of the President of the University at 2 o'clock P.M., all the members in attendance.

On motion of Mr. Johnston, it was decided to elect a Treasurer for the remaining fiscal year.

On motion, the salary of the Treasurer to be elected was fixed at the rate of $400 per annum, and his bond was fixed at $50,000, the same to be satisfactory to the Executive Committee of this Board.

On a call of the roll, Messrs. Godfrey, Johnston, Jamison, Miller, S. H. Ellis, and Alston Ellis voted for H. S. Babbitt.

The Secretary announced that H. S. Babbitt had received six of the seven votes cast for Treasurer, whereupon, the President declared Mr. Babbit to be duly elected to serve for the remainder of the present fiscal year.

The following resolution was offered by Alston Ellis, and was unanimously adopted:

Resolved, That all employés now engaged in the service of this Board be retained in their present positions until the next meeting of the Board of Trustees.

On motion of Mr. Alston Ellis, it was

Resolved, That the Executive Committee of this Board be authorized, in their discretion, to put the building known as the "Club House," in a thorough state of repair at the earliest practicable moment, at an expense not exceeding $300, with the view of leasing the building for the ensuing year.

On motion of Alston Ellis, it was

Resolved, That the President of the Faculty is hereby authorized, with the approval of the Executive Committee, to expend any sum not in excess of $150 in providing for

the annual commencement of the University in June next, and in securing suitable diplomas for the members of the graduating class.

On motion of Stephen Johnston, it was

Resolved, That the rules and regulations heretofore in force for the discipline of the institution be continued during the remainder of the present college year.

It was moved and carried, that when the Board finally adjourns it be to meet on June 18th, at 8 o'clock P.M.

After an informal interchange of views on matters connected with the interest of the University, the Board adjourned until the time previously determined upon.

T. J. GODFREY, *Pres't of Board.*

COLUMBUS, *June* 18, 1878.

The Board of Trustees of the Ohio State University met this day at 8 o'clock P.M., according to previous adjournment.

The following members were present, to wit: Messrs. Godfrey, Alston Ellis, Johnson, Miller, S. H. Ellis, and Anderson.

A quorum being present, President Godfrey called the Board to order, and announced it as ready for business.

The Secretary presented bound volumes, for the use of the members, containing the annual reports of the Trustees of Ohio Agricultural and Mechanical College, and asked permission to complete the series; when, on motion of Mr. Jamison, it was

Resolved, That the Secretary is authorized to complete the record by printing the proceedings of the last meeting of the Board of Trustees of the Ohio Agricultural and Mechanical College.

A draft of by-laws was presented and read; when, on motion, it was

Resolved, That this whole matter be referred to Messrs. Alston Ellis, Godfrey, and Johnston, to examine, revise, and report to the Board at an early day.

Board adjourned until 9 o'clock to-morrow.

COLUMBUS, *June* 19, 1878.

The Board met pursuant to adjournment.

On motion, duly put and carried, it was

Ordered, That the Secretary is hereby instructed to notify Mr. Walter Turner that his lease of the College boarding house will not be renewed, and that he is required to surrender possession of the same to the Board.

On motion of Mr. Jamison, it was

Ordered, That the Secretary notify Mr. Charles E. Thorne that he will be continued in his present position and management until the first of April next.

Accounts of Mr. Francis Collins, administrator of George W. Weinman, deceased, were presented as due from the Ohio Agricultural and Mechanical College.

Said accounts were referred to the Executive Committee.

On motion of Mr. S. H. Ellis, it was

Ordered, That the bill of T. C. Jones, for fifty dollars ($50) be paid by the Secretary.

On motion of Mr. Alston Ellis, it was

Ordered, That the sum of eight thousand two hundred and seventy-seven dollars ($8,277) be and is hereby appropriated from the Endowment Fund of the Ohio State University for the support and maintenance thereof, in payment of salaries and current expenses, and the Secretary is directed to draw orders for the same under the authority of the Board.

A letter was received from T. C. Mendenhall, Professor of Physics and Mechanics, tendering his resignation.

On motion duly put and carried, it was

Ordered, That the communication of Prof. Mendenhall be spread on the minutes.

Also,

Ordered, That it is with extreme regret the Board accepts his resignation of a position which he has so long filled with eminent ability, with entire satisfaction to the Trustees, and great advantage to the institution; and this Board tenders to him its best wishes in his future career.

The following was now communicated to the Board as the unanimous action of the Faculty:

"The Faculty unanimously recommend that the degree of Doctor of Philosophy be conferred on Professor T. C. Mendenhall, in recognition of his eminent services in science and public instruction."

On motion, it was unanimously

Resolved, That it gives this Board great pleasure to comply with the recommendation of the Faculty.

Whereupon it was

Ordered, That the degree of Doctor of Philosophy be conferred on Professor Thomas C. Mendenhall by the Ohio State University.

On motion of Mr. Alston Ellis, it was

Resolved, That the resolution passed by a former Board by which the salaries of the President and those Professors receiving $2,500 per annum be reduced ten per cent. until the average attendance of students be two hundred, be rescinded.

Various matters were partially discussed, and the Board now, at 12:30 P.M., determined to attend the closing exercises of the University, and adjourned until 9 A.M. to-morrow.

COLUMBUS, *June* 20, 1878.

Board met at 9 o'clock A.M.

Charles A. Barton, agent for the care and sale of the Virginia Military Lands belonging to the University, being present, made a written report and exhibit of the sale since his last settlement. The report was ordered to be filed, and after considerable verbal explanations on the general subject, it was

Ordered, That the papers and accounts presented by Charles A. Barton be referred for further examination and settlement to the Finance Committee.

On motion of Mr. Alston Ellis, it was

Resolved, That the Executive Committee is hereby authorized and empowered to enter into a correspondence with eminent physicists with a view of securing a Professor of Physics and Mechanics to fill the position in the Faculty of the University made vacant by the resignation of Prof. Thomas C. Mendenhall; and said committee is further empowered to select a Professor and recommend him to this Board for election.

Mr. Armstrong, of Greene county, appeared before the Board with a plat of survey of supposed vacant Virginia Military Land belonging to the University in said county, and after verbal explanations, on motion of Mr. Jamison, it was

Ordered, That Mr. S. H. Ellis is hereby authorized to sell a portion of land in the Virginia Military District of Ohio, in Greene county, being the property of the University, at such price as he may deem just and proper.

[N. B.—It was subsequently explained that, under the act granting these lands to the Ohio Agricultural and Mechanical College, it was necessary that this particular tract of land, like others of the same kind, must first be appraised, in accordance with the act, before being offered for sale, and Mr. Ellis was instructed accordingly.]

The subject of the boarding-house was discussed with Mr. Baker, an applicant for the same, when, on motion of Mr. Alston Ellis, it was

Resolved, That the use of the boarding-house, after the same has been put in a reasonable state of repair by the Executive Committee, the furniture therein which is the property of the Board, five acres of land, pasturage for one horse and one cow, be tendered to E. P. R. Baker for the ensuing year, on condition that he furnish good lodging, boarding, and fuel to students in attendance upon the University classes at a rate not to exceed three dollars and fifty cents ($3.50) per week.

On motion of Mr. Johnson, it was

Resolved, That the Board having indicated its choice for the occupant of the boarding-house at the University, refer the matter to the Executive Committee to fix terms and have the same properly and definitely settled by a written contract.

On motion of Mr. Alston Ellis, it was

Resolved, That the sum of five hundred dollars ($500) be and is hereby appropriated for the purchase of such books for the University library as will be serviceable for use in the departments of Agriculture and Botany, Mining and Metallurgy, English Language and Literature, Geology, and for general purposes; said sum to be expended by the President of the Faculty after consultation with the heads of the departments for which the books are particularly designed.

On motion, the Board adjourned until 2 o'clock P.M.

AFTERNOON SESSION.

Board met at 2 o'clock P. M.

A communication was received from the Adjutant-General of the State, relative to the safe keeping of the arms and accoutrements in possession of the University, whereupon the following resolution was offered and adopted:

Resolved, That the Executive Committee is hereby instructed to take suitable precautions to insure the safety of the ordnance and small arms now in the University building during the present vacation.

On motion of Mr. Miller, it was

Resolved, That the Executive Committee be authorized and requested to procure insurance to the amount of sixty thousand dollars ($60,000) on the University buildings.

The farm accounts of Professor Townshend were presented and referred to the Farm Committee for examination and report thereon.

A communication from Edward Orton, President of the University, was presented and read. He offered his resignation as President, and made request that he be retained in the chair of Geology. The Board declined to receive the resignation, and the communication was ordered to be laid on the table for future consideration and action.

The Board now adjourned until to-morrow at 8½ o'clock A. M.

COLUMBUS, *June* 21, 1878.

Board met at 8½ o'clock A. M., and was called to order. A quorum being present, received and adopted the following report:

COLUMBUS, OHIO, *June* 21, 1878.

To the Board of Trustees of the Ohio State University:

Your Finance Committee, to whom was referred the reports and accounts of Charles A. Barton, would respectfully report that they have examined the same, and would recommend that an order be drawn on the Treasury of the University, in favor of C. A. Barton, for the sum of four hundred and thirty-nine dollars and five cents ($439.05), said sum being in full of the amount claimed by said Charles A. Barton, in payment for service rendered by him as agent of the University up to date, as per account rendered.

T. EWING MILLER,
ALSTON ELLIS.

Mr. Ralph Leete, a former trustee, and President of Board of Trustees of the Ohio Agricultural and Mechanical College, appeared with books and papers relative to the sale and management of Virginia Military Lands by William H. Leete, a former agent of this Board. A long statement and discussion relative thereto was had, when, on motion of Mr. Jameson, the whole question of the Virginia Military Lands was referred to a commission of three, to investigate the condition of the lands and report the result of their finding at the subsequent meeting of this Board.

A long discussion ensued on various propositions to nominate the members of the commission proposed, but without agreement by the parties interested, whereupon, by mutual consent, the matter was deferred until the afternoon and evening.

On motion of S. H. Ellis, it was

Resolved, That the sum of twelve hundred dollars ($1,200) be and is hereby appropriated to be expended on the University farm, under the direction of the Farm Committee.

The Board now adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

Board met at 2 o'clock P.M. Interviews were held with the President and Professors relative to the wants of their several departments, Messrs. Millikin, Church, Norton, and Townshend being successively called before them, after which, on motion of Mr. Alston Ellis, it was

Ordered, That the Board do now proceed to the consideration of the appointment and retention of the members of the present faculty and assistants.

After brief discussion it was decided that all the professors and teachers be continued in their present positions.

On motion of A. Ellis, it was

Resolved, That hereafter all reports made to this Board by its committees, the members of the Faculty, and the agents and employés of the University, be submitted in writing, although verbal explanation may be allowed by permission of the Board.

On motion, it was

Resolved, That Charles A. Barton is the authorized agent of the Ohio State University for the care and sale of the Virginia Military Lands belonging to the said institution, and is hereby fully authorized and instructed to prosecute all suits and controversies relating to the occupancy of and title to said lands in its name.

Resolved, That the Secretary of this Board furnish Charles A. Barton with a certified copy of the above resolution, as an evidence of his authority to act in the behalf of the University.

On motion of Mr. Miller, it was

Resolved, That Curtis C. Howard, B.S., be appointed, at a salary of five hundred dollars ($500) per year, to perform such chemical analyses as the laws of the State now require the University to make.

The committee to whom was referred the report and account of Professor Townshend, now made a verbal report, recommending the account to be paid; whereupon, it was

Ordered, That the account of Dr. Townshend, Professor of Agriculture, be paid to the amount of four hundred and eight dollars and ninety-nine cents ($408.99), it being the balance of $183.99 against the farm operations, and $225 for cattle furnished by him as per account.

The Board now adjourned to meet at 8 o'clock P.M.

EVENING SESSION.

The Board met at 8 o'clock P.M.

On motion, duly put and carried, it was

Resolved, That the sum of thirteen hundred and fifty dollars ($1,350) be and is hereby appropriated, to be expended by the Executive Committee in furnishing needed supplies for the different departments enumerated below:

Department of General and Applied Chemistry, seven hundred dollars ($700).

Department of Zoölogy and Comparative Anatomy, one hundred dollars ($100).

Department of Mining and Metallurgy, two hundred and twenty-five dollars ($225).

Department of Drawing, two hundred and twenty-five dollars ($225).

On motion, it was

Ordered, That two hundred dollars ($200) be and is hereby placed at the disposal of the Executive Committee, to be expended in advertising the University in various newspapers in the State, and three hundred dollars ($300) for assistant students for the fall term of 1878.

It was also

Ordered, That the qualifications for entrance to the University remain as heretofore.

Ordered, That the question of discipline be referred to the Faculty, and also that of military drill.

On motion, it was

Ordered, That Miss M. F. Morrison be appointed Assistant Librarian, at a salary of one hundred and twenty-five dollars ($125) per year, her services to be three hours per day in the library room, which is to be a study room, where she is to preside and keep order..

On motion of Mr. Anderson, it was

Resolved, That the salary of Miss Alice Williams be increased to five hundred and fifty dollars ($550) per year.

On motion of Mr. Godfrey, it was

Resolved, That one acre of land be conveyed to a certain district in Scioto county, on payment by said district of the appraised value of said acre of land.

Ordered, That two thousand (2,000) copies of a circular, to be prepared by the President of the University, be printed to accompany the annual reports now on hand.

Ordered, That the address of President Orton be printed in the next annual report.

On motion of Mr. Jameson, it was

Resolved, That the Faculty are hereby directed to arrange and provide for a course of lectures on agriculture, to be delivered in the University, beginning in January next, and to continue for one month, for which the charge to those in attendance shall be five dollars ($5), to pay necessary expenses.

And now the Board proceeded to consider and hear statements upon the question of the Virginia Military Lands belonging to the University. Mr. Ralph Leete, acting for William H. Leete, with whom a former Board had an agreement concerning these lands, made statements thereto, and, after a two hours' session, it was

Ordered, That this whole question, with the papers and documents relative thereto, be referred for examination and report to this Board, to a committee of three, consisting of Messrs. Godfrey, President of the Board, and Miller and Anderson of the Executive Committee.

Mr. Anderson moved that William Colvin, formerly occupying the chair of Political Economy and Civil Polity in the Ohio Agricultural and Mechanical College, be appointed to the same position in this University—said chair having been stricken from the curriculum of the College, by the Board of Trustees, in November, 1877.

After a short discussion, and before any vote on the resolution was declared, Mr. Anderson withdrew the resolution, with the consent of the Board, whereupon, Mr. Alston Ellis offered the following preamble and resolution:

WHEREAS, A question has been raised as to the legality of the vote of a former Board, by which the chair of Political Economy and Civil Polity was stricken from the curriculum; therefore, be it

Resolved, That this Board declare said chair of Political Economy and Civil Polity abolished, and that the services of William Colvin, as Professor of said department, are no longer required.

The yeas and nays being called, the resolution was unanimously adopted, as follows, to wit:

YEAS—Messrs. Godfrey, A. Ellis, Miller, and Jameson—4. NAYS—0.

At 11 o'clock P.M., the Board adjourned until its regular meeting in November, unless sooner called together by the President or Executive Committee.

(Signed) T. J. GODFREY, *President.*

COLUMBUS, OHIO, *July* 8, 1878.

Board met upon the call of the President. Present, Messrs. Godfrey, Johnston, Anderson, and Miller. A quorum being present, the Board was called to order, and proceeded to business.

President Orton was heard in relation to a circular ordered to be prepared by him. He also laid before the Board some letters and recommendations relative to applications for the chair of Physics in the University. The matter was referred to the Executive Committee for report.

On motion of Mr. Johnston,

Ordered, That the Secretary furnish to Prof. Mendenhall certified copies, under seal of the University, of their proceedings in relation to his resignation.

Mr. Mathews was heard in relation to his department, and an increase of his salary.

The committee to whom was referred the subject of the Virginia Military Lands being now ready to report, occupied the remainder of the evening.

On motion, the Board adjourned until 9 A.M. to-morrow.

COLUMBUS, *July* 9, 1878.

Board met in the portrait room of the Governor's office at 9 o'clock A.M. Present, Messrs. Godfrey, Miller, Johnston, Alston Ellis, and Jameson. A quorum being present, the Board came to order, and resumed the consideration of the subject of the Virginia Military Lands, which occupied their attention until noon, at which time the Board adjourned until 1½ o'clock P.M.

AFTERNOON SESSION.

Board met at 1½ o'clock P.M., and was called to order, and resumed the matter of settlement with W. H. Leete relative to the Virginia Military Lands. Statements and verbal explanations were heard from Wm. H. and Ralph Leete, and at 3 o'clock the Board went into executive session, when the committee to whom had been referred all the accounts and statements of the above Messrs. Leete, offered the following, which was unanimously adopted:

Resolved, That for the purpose of making a final and full settlement with W. H. Leete for his services to this date, in relation to the Virginia Military Lands, the Board of Trustees tender to him the sum of seventeen hundred dollars ($1,700), to be paid to him out of the proceeds of lands hereafter to be sold and such lands as have heretofore been reported by him as belonging to the Ohio State University, and upon his acceptance of this offer, that he surrender all plats, papers, and documents of every description in his possession or under his control, relating to said lands, of any value concerning the same.

I do hereby accept the foregoing.

(Signed) W. H. LEETE,
By RALPH LEETE.

On motion duly made, and carried affirmatively, it was

Resolved, That the Secretary of this Board be instructed to notify Mr. W. H. Leete to turn over to the Executive Committee all papers and documents relating to the Virginia Military Lands, as mentioned in the resolution adopted as the basis of agreement between said W. H. Leete and this Board.

It appearing by the statement of Ralph Leete, Esq., that he had obtained a decree in Scioto county, Ohio, in favor of the Ohio State University and against James Taylor, setting aside a sale of land to him in said county, and that the notes given by said Taylor, in the purchase of said land, ought to be filed in the Clerk's office of said county as having been cancelled, it is

Ordered, That the Treasurer deliver over said notes to Ralph Leete to be filed as aforesaid.

On motion of Alston Ellis, it was

Resolved, That the position of Professor of Physics and Mechanics, made vacant by the resignation of Thomas C. Mendenhall, be tendered to Prof. S. W. Robinson, of Champaign, Illinois, said professorship to be on the same footing, as regards salary, as the other regular professorships now connected with the University are.

On motion of Mr. Jameson, it was

Resolved, That the Executive Committee of this Board is hereby instructed to refer the claim of Professor William Colvin, for alleged services in the Ohio Agricultural and Mechanical College, to the Attorney General for a legal opinion as to the liability of this Board to pay such claim, and to report the opinion so obtained to this Board at the next meeting.

On motion duly put, it was

Ordered, That the matter referred to in Captain Barton's letter, relative to a check of Horace Leete, in the case of Cappet and Webb, be referred to the Executive Committee with power to act.

The Board then adjourned to meet at the American Hotel at 8½ P.M.

EVENING SESSION.

Board met at 8½ o'clock P.M. A quorum being present, Mr. Johnston took the chair, and called the Board to order.

The evening was spent in discussing various matters of interest connected with the University, but nothing requiring to be recorded.

At a late hour, it was moved, and carried, that this Board do now adjourn to meet in the city of Columbus on the first Thursday of November, in accordance with the following:

Ordered, That the next annual meeting of this Board be held on the first Thursday of November next, at 8 o'clock P.M.

(Signed) T. J. GODFREY, *President*.

COLUMBUS, *September* 11, 1878.

Board was called by the President to meet this day at 7½ P.M.

There being present a quorum, to wit: Messrs. Godfrey, Miller, Johnston, S. H. Ellis, J. H. Anderson, and Jamison, the President took the chair and called the Board to order, and the minutes of the former meeting were read and approved.

A communication from Capt. Barton relative to a certain sale of Virginia Military lands was received and read, and, on motion of Mr. Johnston, was laid on the table for future consideration.

Mr. Johnston offered the following, which, being duly seconded, was before the Board.

WHEREAS, At a meeting of Trustees on the 19th of June, 1878, a resolution was passed as follows:

Resolved, That the resolution passed by a former Board, by which the salaries of the President and those professors receiving $2,500 per annum be reduced ten (10) per cent. until the average attendance of students shall be two hundred (200) be rescinded.

And WHEREAS, It was then the intention of the Board that, although said resolution did, by implication, restore the salaries to their original sum, $2,500, it was then the intention of the Board to fix the salaries of the Professors at the sum of $2,250 per annum, and that the Board did then neglect to fix the salaries as contemplated by the Board; therefore

Resolved by the Board, That the salaries of said professors be and the same are fixed as follows: For the professors, each $2,250 per annum; for the President, the sum of $2,750 per annum.

Mr. Anderson moved to amend by striking out the sum of $2,250, and the sum of $2,750, where they respectively occurred, and insert $2,000 and $3,000.

A debate now arose, after which a vote by yea and nay was demanded, and, on calling the roll, those voting yea were: Messrs. Anderson, Jamison, and S. H. Ellis—3. Those voting nay: Messrs. Godfrey, Miller, and Johnston—3. The President declared the motion lost; and the question on the adoption of Mr. Johnston's preamble and resolution being now put, it was decided in the affirmative.

Mr. Anderson, Chairman of the Executive Committee, to whom had been referred the claim of William Colvin for pay for services never performed, reported that the committee had conferred with the Attorney-General on the subject, and were ready to report.

On motion, it was

Ordered, That all the reports of the committee be heard.

Mr. Anderson made a verbal report, and read the report of the Attorney-General.

On motion,

Ordered, That the report be accepted, placed on file, and the committee discharged.

On motion of Mr. Johnston, the resignation of President Orton, tendered and laid on the table at a former meeting, was now taken up and discussed, after which Mr. Johnston offered the following, which was unanimously adopted:

Resolved, That the resignation of President Orton, heretofore tendered, be not now accepted, and that he be requested to continue as such President of the Ohio State University until otherwise determined by the Board.

Interviews were had with Professors Church and Lomia in regard to their departments, and the Board listened to their request and explanations.

The Board then adjourned until to-morrow at 7½ o'clock P.M.

COLUMBUS, *September* 12, 1878.

Board met at 7½ o'clock P.M.

President Orton presented a communication from Professor Robinson, and made some explanations concerning the necessity of some appropriation for the benefit of Mechanics.

The communication of Professor Robinson was read and discussed, when it was

Ordered, That six hundred dollars ($600) be and is hereby appropriated to be expended by Professor Robinson for supplies for the Physical Laboratory, and an increased equipment in Mechanics.

A preamble and resolutions concerning military drill were now presented for the consideration of the Board, and elicited considerable discussion.

Mr. S. H. Ellis moved that the rules be amended so as to require that military students be required to give the military salute to the professors of military tactics and drill while on the University grounds.

This amendment, on being put to vote, was lost; and now, the resolutions being read one by one, and slightly amended, the question turned on their adoption, and, upon motion duly put and questioned, was decided affirmatively, only Mr. S. H. Ellis voting nay.

WHEREAS, The Board of Trustees are impressed with the necessity of assuming some responsibility as regards the military drill, the following resolutions are adopted with a view of insuring its greater efficiency:

I. *Resolved*, That the students electing military drill shall be required to continue in this for the period of one calendar year from their entrance therein. The date of entrance to be determined, in every instance, by the date of the student's own signature, in a book kept for that purpose by the Professor of Military Science and Tactics. Non-compliance with this requirement must be attended with the dismissal of the student from the University, unless specially excused by the Faculty.

II. *Resolved*, That all students while undergoing military training shall wear a uniform as at present, or as the Faculty shall prescribe from time to time. A period of four weeks will be allowed students from date of entrance to the drill, in which to provide themselves with the required uniform.

III. *Resolved*, That an academic value will be given to the Military Department, and said department shall be placed in one of the schools of the University. The drill will count as a quarter of the study; the theoretical study of tactics and military science taken conjointly with drill, shall also count as a quarter of a study. In case of the commissioned officers, however, the drill will count as half a study, and the study of tactics and military science as half a study. In applying this rule, a cadet shall be considered as having been a commissioned officer all of the year in which he receives his promotion, provided that he holds his office until the end of that academic year. No value will be given to the study of tactics when not taken in connection with that of military science, as the acquiring of a knowledge of the former is a necessity with all cadets holding office.

IV. *Resolved*, That the Faculty shall provide a duty for those who do not engage in the drill, during the hours set apart for military instruction.

V. *Resolved*, That no student shall wear the military uniform prescribed by the Faculty, except those who drill, or those who have completed a two years' course of practical and theoretical military training, under penalty of dismissal from the University.

VI. *Resolved*, That when the Ohio State University Battalion of Cadets, or any part thereof, is ordered by the Faculty to take part in any public parade, procession, prize-drill, on the campus, or exercise, on commencement day, the cadets shall obey the order, under penalty of suspension for the remainder of that and all the next University term, even though this term should be in the next academic year.

VII. *Resolved*, That the students undergoing military instruction shall be required to render the proper military salute to their commanding officer, and to the Professors of the University, on meeting them anywhere outside of the University building.

VIII. *Resolved*, That the existing Faculty regulations, by which a student is expelled from the University on receiving eight (8) unexcused reports for breaches of military discipline in any one term, is hereby fully approved and indorsed.

Mr. Leo. Weltz, of the State Board of Agriculture, appeared, and offered to donate a fine collection of evergreens for the College grounds; whereupon it was

Ordered, That this liberal offer be accepted, and the thanks of the Board be returned to Mr. Weltz.

Application was made by Dr. Townshend for a cistern and some repairs to his house, which, after being discussed, it was

Ordered, That the sum of fifty dollars ($50) be and is hereby appropriated for this purpose, to be expended under the direction of the Executive Committee, and to be paid from Dr. Townshend's house-rent.

It was also

Ordered, That Mr. Thorne, Farm Superintendent, charge Prof. Townshend twelve and one-half cents per head per month for pasturage of sheep on the College farm.

It was

Ordered, That Mr. Thorne proceed to gather the corn for the University off the ground claimed by Walter L. Turner, for his use.

It was also

Ordered, That 5,000 letter-heads, at six dollars ($6) per thousand and 5,000 envelopes, at five dollars ($5) per thousand, be provided for the use of this Board and the University.

Certain accounts of W. L. Turner were referred to the Executive Committee.

It was

Resolved, That Prof. Lomia be employed for the ensuing school year as teacher of elocution, at the rate of *fifty dollars* ($50) per term.

On motion of Mr. Johnson,

Resolved, That the janitor of the University buildings be paid a monthly salary of sixty dollars, to be in full payment for his services, and also services of any help required by him in discharge of his duties as heretofore rendered—his term of service to be regulated by the trustees, as they may deem proper or necessary in the interest of the University.

On motion of Mr. Godfrey,

Resolved, That the Standing Committee of this Board report to the Board at the next November meeting, a detailed statement of all expenditures of moneys appropriated for their disposal, and that the President of the Faculty report to us at the same time, in detail, all moneys expended by him and the Faculty, and a list of the newspapers in which the University was advertised this year.

On motion, the Board now adjourned to November 6th, eight P.M.

(Signed) T. J. GODFREY, *President*.

COLUMBUS, OHIO, *November* 6, 1878.

Pursuant to adjournment, the Board of Trustees met at 8 o'clock P.M. Present: Messrs. Godfrey, Miller, Johnston, and Anderson. A quorum being present, the Board proceeded to business.

A communication was received from Prof. Church informing the Board that Curtis C. Howard, who had been appointed Special Analyst at a previous meeting of the Board, had declined the appointment. After explanations made by Prof. Church, on motion of Mr. Miller, it was

Resolved, That in place of Curtis C. Howard, Nat. W. Lord, M.E., be appointed, at a salary at the rate of $500 per annum, to perform such analyses as the laws of the State may now require the University to make.

A communication was received from Prof. Lomia in reference to the procurement of additional arms and military stores for his department, which was discussed and referred to Executive Committee, with power to act.

On motion, it was

Ordered, That the action of the Board at a former meeting, in relation to a portion of a crop of corn claimed by Walter Turner, be and is hereby rescinded.

On motion, the Board adjourned until 9 o'clock A.M. to-morrow.

COLUMBUS, *November* 7, 1878.

Board met at 9 o'clock A.M. Present: Messrs. Godfrey, Johnston, Alston Ellis, S. H. Ellis, Anderson, and Miller.

Mr. Alston Ellis having informed the Board that the Committee on By-Laws, Rules, and Regulations were ready to report, on motion, it was

Resolved, That we now proceed to hear and discuss the By-Laws.

The same having been read, discussed, and amended,

On motion of Mr. Johnston,

Resolved, That this Board do now adopt the following By-Laws, Rules, and Regulations. [See By-Laws, Rules, and Regulations in Appendix B.]

On motion of Mr. Anderson, it was

Resolved, That the President of this Board be requested to confer with the Attorney-General in reference to the manner in which the expenses of the members of the Board, as allowed by law, shall be paid—whether from the University funds or the State Treasury.

Board took a recess until half-past one o'clock P.M. On reassembling at that time Captain Charles A. Barton, Agent of the University for the sale of Virginia Military Lands, made a verbal report of his proceedceedings.

On motion of Mr. S. H. Ellis, it was

Resolved, That Charles A. Barton be continued as our Agent for the care and sale of the Virginia Military Lands, and that he have his necessary expenses paid and receive for his services sixty dollars ($60) per month.

The ayes and nays having been demanded on the passage of the resolution, those voting aye were: Messrs. Anderson, Miller, S. H. Ellis, Godfrey, and A. Ellis—6; those voting nay: None. So the resolution was carried affirmatively.

On motion of Mr. Johnston, it was

Resolved, That the account of Captain Charles A. Barton, amounting to three hundred and ten dollars and forty-two cents ($310.42), for services to November 1, 1878, be allowed, and the Secretary is hereby directed to draw an order on the Treasurer for the same.

On motion of Mr. S. H. Ellis, it was

Resolved, That the fee of five dollars ($5.00) for the Special Agricultural Course to begin in January next is hereby remitted, and the course shall be free.

Resolved, That one thousand five hundred circulars, announcing the above fact, be printed and distributed.

On motion of Mr. Johnston,

Resolved, That the contract of sale made May 12, 1865, to Amos Nichols, of lot No. 104, of thirty-nine acres, and two hundred and twelve acres of lot No. 103, in Scioto county, for the sum of seven hundred and thirty-nine dollars ($739), be rescinded; and that Mr. Nichols, having deeded to him lot No. 104, of thirty-nine acres, and twenty-two acres of lot No. 103, in full satisfaction of the sum of two hundred and forty-seven dollars, paid by Mr. Nichols May 12, 1875, and that the Treasurer, Dr. H. S. Babbitt, is hereby directed to deliver to Amos Nichols his notes for the purchase money.

Board adjourned to 7½ o'clock P.M.

EVENING SESSION.

Board met at 7½ o'clock P.M. with a quorum present. The President of the University appeared and presented his report and the reports of the professors in the University, which were referred to the Executive Committee.

On motion of Mr. A. Ellis,

Resolved, That no apparatus nor specimens belonging to the University shall be removed from the University buildings, for any purpose whatsoever, unless by a direct vote of the Board.

On motion of Mr. Miller, it was

Resolved, That the President of the Board be instructed to correspond with the War Department, for the purpose of securing the detail of Lieutenant Lomia as Professor of Military Science and Tactics, for a period of two years longer.

On motion of Mr. A. Ellis, it was

1. *Resolved*, That the sum of four hundred dollars ($400) be and is hereby appropriated for the use of the Executive Committee, to be expended in securing such teaching assistance, during the second and third terms, as, in their opinion, seem needful; the above sum to include such laboratory fees as may be remitted in payment for such student teaching.

2. *Resolved*, That the Executive Committee is hereby authorized to expend any sum not exceeding forty dollars ($40), in securing suitable material for dissection in the Zoölogical Laboratory.

3. *Resolved*, That the Executive Committee is hereby authorized to make such terms with those students now occupying the Club House, as may be just and proper, with a view to fixing the responsibility of such students as regards any damage done to the building during their occupancy of same.

Board adjourned to 9 o'clock A.M.

COLUMBUS, *November* 9, 1878.

Board met at 9 o'clock A.M., and a quorum being present, proceeded to business.

An interview was had with the Treasurer, when, on motion, it was

Resolved, That the income from the Endowment Fund (so called), held in trust by the State, be appropriated for the support of the University for the ensuing fiscal year, and for such other purposes incidental thereto as the Board may from time to time designate: provided, that the use of the income of so much of the fund as arises from the proceeds of the lands donated by the act of Congress, July 2, 1862, be limited to the restrictions of the second clause of section five of said act of Congress.

A communication had been received from Mr. Ralph Leete, concerning a lawsuit of William H. Leete, a former land agent of the Board, in regard to compensation for his services, and it had been agreed to invite the attorney of William H. Leete, and the Attorney-General, to an interview; whereupon these gentlemen appeared, each making a statement—Mr. M. A. Daugherty for William H. Leete, and the Attorney-General for the Board.

After which, on motion of Mr. A. Ellis, it was

Resolved, That the proposition of William H. Leete, made through Ralph Leete, that the matters at issue between said William H. Leete and this Board, now pending in the Common Pleas Court of Franklin county, Ohio, be referred to a committee consisting of the Attorney-General of the State, Isaiah Pillars, M. A. Daugherty, T. J. Godfrey, and Stephen Johnston, with full power to investigate, and take such action as in their judgment is both just and equitable to said William H. Leete and Ohio State University, and that their action shall be final and conclusive.

The Board now adjourned to 1½ o'clock P.M.

AFTERNOON SESSION.

Board met at 1½ o'clock P.M.

On motion, it was decided to proceed to the usual election of officers for the ensuing year, beginning November 15, 1878.

The following officers were elected:

President.—T. J. Godfrey, of Celina, Ohio.
Secretary.—Albert Allen, of Columbus.
Treasurer.—Dr. H. S. Babbitt, of Columbus.
Executive Committee.—J. H. Anderson, T. Ewing Miller, and Stephen Johnston.
Farm Committee.—S. H. Ellis, J. H. Anderson, and James B. Jamison.
Finance Committee.—T. Ewing Miller, Alston Ellis, and Stephen Johnston.

On motion of Mr. A. Ellis, it was

Resolved, That in the retirement of Joseph Sullivant as Secretary of this Board, we desire to express our high appreciation of his valuable services, extending over a period of several years, in behalf of the University.

The Board now, at 3 o'clock, adjourned to visit the University.

EVENING SESSION.

At 8 o'clock P.M., pursuant to adjournment, the Board met, and a quorum being present, proceeded to business.

On motion of Mr. Miller, it was

Resolved, That Albert Allen be elected Secretary *pro tem.* for the balance of the present fiscal year.

On motion of Mr. Miller,

Resolved, That an appropriation of one hundred and twenty-five dollars ($125) be made for the purpose of providing a Pathological Cabinet and such charts as may be needed for illustration in veterinary instruction; this to be in lieu of a former appropriation, made in June, 1876, for Professor Townshend's department, and never used.

Various matters of general interest were informally considered, but no definite action taken thereon.

On motion of Stephen Johnston, it was

Resolved, That when the Board adjourns, it be to meet again on the 28th day of November, 1878, at 8 o'clock P.M., at the American House, in Columbus.

On motion, the Board then adjourned.

APPENDIX.

APPENDIX A.

HISTORY OF THE OHIO STATE UNIVERSITY, FORMERLY THE OHIO AGRICUTURAL AND MECHANICAL COLLEGE.

CONTAINING ACT OF INCORPORATION AND UNREPEALED ACTS OF THE GENERAL ASSEMBLY OF OHIO.

The history of this institution is embraced within quite narrow limits.

On July 2d, 1862, the Congress of the United States passed an act donating lands to the several States and Territories which may provide colleges for the benefit of Agriculture and the Mechanic Arts. The act is recited below:

AN ACT

To accept an act of congress approved July 2d, 1862, entitled "an act donating lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts."

[Passed and took effect February 9, 1864. 61 vol. Stat. 7.]

WHEREAS, by an act of congress approved July second, one thousand eight hundred and sixty-two, it is provided as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several states for the purposes hereinafter mentioned, an amount of public land to be apportioned to each state a quantity equal to thirty thousand acres for each senator and representive in congress, to which the states are respectively entitled by the apportionment under the census of eighteen hundred and sixty; *provided,* that no mineral lands shall be selected or purchased under the provisions of this act.

SEC. 2. That the land aforesaid, after being surveyed, shall be apportioned to the several states in sections or subdivisions of sections not less than one quarter of a section, and whenever there are public lands in a state subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said state shall be entitled shall be selected from such land within the limits of such state, and the secretary of the interior is hereby directed to issue to each of the states in which there is not the

quantity of public lands subject to sale at private entry at one dollar and twenty-five cents per acre, to which said state may be entitled, under the provisions of this act, land scrip to the amount in acres for the deficiency of its distributive share, said scrip to be sold by said states, and the proceeds thereof applied to the uses and purposes prescribed in this act, and for no other use or purpose whatsoever; *provided*, that in no case shall any state to which land scrip may be thus issued, be allowed to locate the same within the limits of any other state or of any territory of the United States; but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents per acre; and *provided further*, that not more than one million acres shall be located by such assignees in any one of the states; and *provided further*, that no such location shall be made before one year from the passage of this act.

SEC. 3. That all the expenses of management, superintendence and taxes, from date of selection of said lands, previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the states to which they may belong out of the treasury of said states, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purpose hereinafter mentioned.

SEC. 4. That all moneys derived from the sale of the lands aforesaid by the state to which the lands are apportioned and from the sales of the land scrip hereinbefore provided for shall be invested in stocks of the United States, or some other safe stocks, yielding not less than five per centum upon the par value of said stocks, and that the moneys so invested shall constitute a perpetual fund; the capital of which shall remain forever undiminished (except so far as may be provided in section fifth of this act), and the interest of which shall be inviolably appropriated by each state which may take and claim the benefit of this act to the endownment, support and maintenance of at least one college, where the leading objects shall be without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such a manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of of the industrial classes in the several pursuits and professoins of life.

SEC. 5. That the grant of land and land scrip hereby authorized, shall be made on the following conditions, to which as well as to the provisions hereinbefore contained the previous assent of the several states shall be signified by legislative act:

1st. If any portion of the fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall by any action or contingency, be diminished or lost, it shall be replaced by the state to which it belongs, so that the capital of the fund shall remain forever undiminished, and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth section of this act, except that a sum not exceeding ten per centum upon the amount received by any state under the provisions of this act may be expended for the purchase of lands for sites or experimental farms whenever authorized by the respective legislatures of said states.

2d. No portion of said fund, nor the interest thereon, shall be applied directly or indirectly under any pretense whatever, to the purchase, erection, preservation, or repair of any building or buildings.

3d. Any state which may take and claim the benefit of the provisions of this act, shall provide within five years at least not less than one college as described in the fourth section of this act, or the grant to such state shall cease, and said state shall be bound to pay the United States the amount received of any lands previously sold, and that the title to purchase under the shall be valid.

4th. An annual report shall be made, regarding the progress of each college, recording any improvements and experiments made, with their costs and results, and such other matters including state industrial and economical statistics as may be supposed useful; one copy of which shall be transmitted by mail free, by each, to all other colleges which may be endowed under the provisions of this act, and also one copy to the secretary of the interior.

5th. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the states at the maximum price, and the number of acres proportionally diminished.

6th. No state while in condition of rebellion or insurrection against the government of the United States, shall be entitled to the benefits of this act.

7th. No state shall be entitled to the benefits of this act, unless it shall express its acceptance thereof by the legislature within two years from the date of its approval by the President.

SEC. 6. That land scrip issued under the provisions of this act, shall not be subject to location until after the first of day January, one thousand eight hundred and sixty-three.

SEC. 7. That the land officers shall receive the same fees, for locating land scrip issued under the provisions of this act, as are now allowed for the location of military bounty land warrants, under existing laws; *provided*, their maximum compensation shall not be thereby increased.

SEC. 8. That the governors of the several states to which scrip shall be issued under this act, shall be required to report annually to congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

On February 9th, 1864, the General Assembly of the State of Ohio passed an act to accept the grant conveyed in the act above given, in the following words:

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That the assent of said state is hereby signified to the aforesaid act of congress, and to all the conditions and provisions therein contained, and the faith of the state of Ohio is hereby pledged to the performance of all such conditions and provisions.

SEC. 2. This act to take effect and be in force from and after its passage.

Governor John Brough, in his annual message, delivered in January, 1865, announced that certificates of scrip for 630,000 acres of land had been received and placed in the State Treasury. The next step was the passage of

AN ACT

To provide for the sale of land scrip, and other purposes.

[Passed and took effect April 13, 1865. 62 vol. Stat., 189.]

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That the auditor, treasurer, and secretary of state are hereby authorized and directed on or before the first day of May, eighteen hundred and sixty-five, to advertise in such form as they may deem proper, for proposals for the purchase of the land scrip received from the United States, for the establishment of an agricultural college or colleges in the state

of Ohio. Such advertisement shall authorize proposals to be received by the auditor, treasurer, and secretary of state, and by the auditor and treasurer in each and every county in the state. The term of said notice shall not be less than ninety days from the date thereof. No proposition shall be received for less than one hundred and sixty acres, nor for a rate of less than eighty cents per acre. [*Repealed April* 5, 1866.]

SEC. 2. If offers should not be received for the whole of said scrip, acceptable to said auditor, treasurer, and secretary of state, the said officers are authorized and directed to again advertise, in like manner, for proposals for the portion remaining unsold. The term of said notice shall be sixty days from date, and be otherwise governed by the regulations hereinbefore provided. [*Repealed April* 5, 1866.]

SEC. 3. Upon the acceptance of proposals, and payment thereon, the party entitled thereto shall receive from said officers the amount of scrip so purchased, with a certificate that he has duly purchased and paid for the same; and on presentation of the same to the governor, he shall execute the necessary transfer of the scrip, in accordance with the regulations provided by the general land office therefor.

SEC. 4. The auditor and treasurer of each county in the state shall jointly receive fo such service as they may perform under this act, in accordance with their instructions from the auditor, treasurer, and secretary of state, a sum equal to five per centum on all moneys received and paid over by them upon the first three hundred and twenty acres of scrip sold, three per cent. on all moneys so received and paid over for the next three hundred and twenty acres sold, and one per cent. on all receipts for sales after six hundred and forty acres have been sold; and it is hereby made the duty of the auditor and treasurer of each county in the state to perform such services as may be required of them by the auditor, treasurer, and secretary of state, under this act; and the aforesaid county officers shall be paid by the auditor of state out of the money hereinafter appropriated for such purpose.

SEC. 5. Said auditor, treasurer, and secretary of state, on or before the first day of December next, shall make to the governor a full and explicit report of their proceedings under this act; which report the governor shall communicate to the general assembly at its next session. [*Repealed April* 5, 1866.]

SEC. 6. All money received from the sale of land scrip shall be paid into the state treasury, and shall be appropriated and used by the commissioners of the sinking fund for the reduction and payment of the other public debt of the state.

SEC. 7. Upon the amount of money so received for the sale of scrip appropriated for and to be used in the reduction of the other public debt of the state as aforesaid, there shall be allowed, and paid semi-annually on the first days of July and January in each year, interest at the rate of six per cent. per annum; which shall be appropriated as provided in the act of congress approved July 2d, 1862, "to the endowment, support, and maintenance of at least one college, where the leading object shall be—without excluding other scientific and classical studies, and including military tactics—to teach such branches of learning as are related to agriculture and the mechanic arts;" and for the prompt and regular payment of said interest, the preservation and appropriation of said fund, and the strict observance and fulfillment of the act of congress before referred to, the faith of the state is hereby irrevocably pledged.

SEC. 8. The commissioners of the sinking fund are hereby authorized and empowered, as fast as the sinking fund will enable them to do so, to reduce the debt called the "agricultural fund," by the purchase of stocks of the United States or of this State, yielding not less than six per centum upon the par value of said stocks, which stocks, when so purchased, shall be transferred to the "state of Ohio, in trust for the agricul-

tural college," and shall be deposited with the treasurer of state, and when so purchased, transferred, and deposited, shall, to the extent of the amount paid for such stocks, reduce the debt thereby created and denominated the "agricultural fund."

SEC. 9. There shall be appointed by the governor, by and with the advice and consent of the senate, five commissioners, no two of whom shall be residents of the same congressional district; two of whom shall be selected so as to represent the agricultural, and two representing the mechanical and manufacturing interests of the state, who shall be required to take and indorse upon their certificates of appointments an oath or affirmation to honestly and faithfully perform the duties imposed by this act; one of said commissioners shall be selected with reference to his military knowledge. [*Repealed.*]

SEC. 10. Said commissioners, after full examination, shall report to the governor by the first of December next, their opinion as the place for locating said college or colleges; and in forming such opinion, said commissioners shall consider the accessibility of such location to all parts of the state, by the ordinary means of travel, the inducements which may be offered by any locality in the way of donations of land, buildings, money, or other valuable property, for said college or colleges, the practicability of procuring, at reasonable expense, the necessary quantity of land adapted to the use of an experimental farm, with such other considerations as should have influence in the selection of such location. Said commissioners shall also consider and report any propositions which are now or may, within six months, be made, with the inducements offered for the establishment of more than one such college or colleges. [*Repealed April* 5, 1866.]

SEC. 11. Said commissioners shall prepare and submit a detailed plan for the organization of said college or colleges, and the necessary buildings therefor. It shall embrace the proper control and management of the property, the necessary structures, implements and stock of the farm; the branches and their respective divisions of learning to be taught; the course of studies to be pursued, and their terms and extent; the professorships required to be established; the character and extent of experimental husbandry upon the farm; the propriety and feasibility of connecting experimental studies in the mechanic arts; the probable expenditures for these respective purposes, and the probable annual expenses of conducting said institution; with such other matters as they may deem important or valuable as connected therewith. [*Repealed April* 5, 1866.]

SEC. 12. Said commissioners shall submit to the governor, by the first day of December next, their said plan of organization, with a full report of their proceedings under the requirements of this act, which the governor shall communicate to the genera assembly at its next session. [*Repealed April* 5, 1866.]

SEC. 13. Said commissioners shall receive no compensation for their services, but may be allowed their necessary expenses in the discharge of their official duties. [*Repealed April* 5, 1866.]

SEC. 14. For the purpose of carrying into effect the provisions of this act, the sum of five thousand dollars is hereby appropriated from any money in the treasury not otherwise appropriated. [*Repealed April* 5, 1866.]

SEC. 15. This act shall take effect and be in force from and after its passage.

In a report to the Governor, dated December 20th, 1865, the commissioners announce the sale of scrip for 11,360 acres, and declare their opinion that, unless greater powers should be conferred upon them, the scrip of Ohio would not all be sold in less than ten years, as other States were selling similar scrip below the minimum price to which they were confined.

In accordance with this suggestion and these facts, the Legislature passed an act on April 5th, 1866, to amend the act aforesaid, so as to remove the restriction of a minimum price of eighty cents per acre.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That section one of the aforesaid act be amended so that the same shall read as follows: Section 1. That the auditor, treasurer, and secretary of state are hereby authorized and directed to advertise, as often as they may deem the same advisable, and in such form as to them may seem proper and necessary to the prompt disposition of the land scrip received from the United States for the establishment of an agricultural and mechanical college or colleges in the state of Ohio, for proposals for the purchase of the same, in quantities not less than one hundred and sixty acres, such proposals for purchase to be made either to said auditor, treasurer, and secretary of state, or to the auditor and treasurer of any county of the state, subject to the limitations and restrictions from time to time fixed by said auditor, treasurer, and secretary of state, not inconsistent with this act.

SEC. 2. That section two of the aforesaid act be so amended as to read as follows: Section 2. Said auditor, treasurer, and secretary of state are hereby authorized to sell or cause to be sold said land scrip at the best price they can obtain for the same, and to employ a suitable person or persons to aid them in making such sales, and to pay to such persons such commissions on sales made by them, as they may deem adequate to secure prompt and vigorous efforts to effect sales. And they are further authorized to accept propositions for the purchase of said scrip in quantities not less than fifty thousand acres of land, on terms of payment of not less than one-fourth in hand, and the remainder in payments not more extended than one-fourth in two years, one-fourth in four years, and the remaining one-fourth in six years; or in quantities of not less than ten thousand acres of land, on the following terms of payment: Not less than one-fourth in hand, and the remainder in payments not more extended than one-fourth in one year, one-fourth in two years, and the remaining one-fourth in three years, with interest on the deferred payments from the date of purchase; and the deferred payments to be secured by mortgage upon real estate situate within the state of Ohio, or deposit of the bonds of this state or of the government of the United States; *provided*, also, that all contracts to pay commissions on sales, or for the sale of scrip on time, shall be approved by the governor, in writing, before the same shall be valid and binding on the state.

SEC. 3. That section five of said act be so amended as to read as follows:

Section 5. Said auditor, treasurer, and secretary of state shall, annually, on the first Monday of December, make to the governor a full and explicit report of all their proceedings, and of the proceedings of county auditors and treasurers, under this act, which report the governor shall communicate to the general assembly at the next ensuing session thereof.

SEC. 4. That the first, second, fifth, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, and fifteenth sections of the aforesaid act be and the same are hereby repealed.

SEC. 5. This act shall take effect and be in force from and after its passage. [S. & S. 645–650.]

On December 10th of the same year the commissioners reported to the Legislature the sale of all the scrip, the great bulk of it being sold at fifty-three cents per acre. The total proceeds of the sales were $342,450.80. This sum was paid into the State Treasury during 1866 and 1867, and interest on it was computed from the date of payment at six per cent.

The location of the College now became a subject of interest, which led to the following legislation :

AN ACT

Relative to the establishment of the Ohio Agricultural and Mechanical College.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That the governor of Ohio, *ex officia,* the president of the Ohio state board of agriculture, *ex officio,* and five other persons, so chosen as to represent all the industrial classes of the state, to be appointed by the governor, with the consent of the senate, are hereby constituted a board of trustees, whose duty it shall he to receive proposals and report to the next session of this general assembly, such proposals as may have been received, and their opinion as to the place for locating an agricultural and mechanical college for the state of Ohio, in accordance with an act of congress, approved July 2, 1862, entitled "an act donating lands to the several states and territories, which may provide colleges for the benefit of agriculture and the mechanic arts."

SEC. 2. Said trustees are hereby authorized to receive proposals for do ations of land, building, and money in trust for the state of Ohio, for the location and establishment of a college as contemplated by the act of congress referred to in the first section of this act.

SEC. 3. The trustees shall receive no *per diem,* but shall have all their necessary expenses paid while actually in the service of the state.

SEC. 4. This act shall take effect from and after its passage, and the governor shall immediately thereafter notify said persons of their appointment, and designate a day for their meeting in the city of Columbus, for the organization of said board.

April 5, 1866. [63 v. 102.]

The trustees appointed under this act were Darwin Gardiner, David Taylor, Peter Thatcher, C. L. Poorman, and Miles Greenwood. In June, 1865, they received propositions, in regard to the location of the College, from Miami University, Oxford, and Farmers' College, near Cincinnati, and in October similar proposals from Mt. Union College, from the village of Kent, and the town of Worthington.

On the first of December, 1865, in accordance with the requirements of the act under which they were appointed, they made their report to Governor Anderson. Two reports, in fact, were presented. The majority report, signed by four of the commissioners, recommended that the land scrip, or the funds arising from its sale, should be equally divided, and that half should be devoted to the reorganization of Miami University, so that its courses of study should be brought into harmony with the terms of the congressional grant, and that the other half should be devoted to the endowment of a college in the northern part of the State in the interests of agriculture and the mechanic arts. The minority report, presented by Miles Greenwood, recommended the acceptance of the proposition of Farmers' College. Neither report was adopted by the Legislature.

From the time when the State accepted the land grant, the use to be

made of the funds resulting from it was the subject of earnest and prolonged discussion in the Legislature, by the press, and throughout the State at large. A division of the fund among colleges already established in the State was strenuously urged by many, and as strenuously opposed by more. The State Board of Agriculture, especially, labored actively and persistently to prevent any such division.

The efforts to secure a division were gradually abandoned, as it came to be seen that public sentiment demanded the establishment of an institution unfettered by tradition, and different in character from any at the time existing in the State. By the end of the year 1867, at least, it was generally conceded that a separate and independent college must be established upon this fund.

This fund is the financial basis of the present College. It has been augmented by about forty-seven per cent. of itself through the additions of interest, simple and compound, until at the opening of the institution in 1873 it amounted to $500,000. Its security is established by its being made a part of the irreducible debt of the State. The rate of interest which it bears is six per cent.

After the selling of the land scrip, the location and plan of organization of the future College received the prolonged attention of successive Legislatures.

On March 7, 1868, a joint resolution was introduced into the House of Representatives, which was subsequently passed, appointing a joint committee from the Senate and the House of Representatives, with authority to receive propositions for the location of the College, and to report the same to the Legislature. The resolution is given below:

JOINT RESOLUTION

To provide for taking immediate steps to agree upon the location of the Ohio Agricultural and Mechanical College, and for the appointment of a joint committee on the subject.

WHEREAS, The congress of the United States, by an act passed July 2d, 1862, entitled "an act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," donated to the State of Ohio, land-scrip; and,

WHEREAS, The general assembly of Ohio, by an act passed February 9th, 1864 (L. of O., vol. 61, p. 7), accepted said donation, subject to all the conditions and provisions contained in said act, and pledged the faith of the state of Ohio to the performance of all such conditions and provisions; and,

WHEREAS, The state of Ohio has received from the United States, land-scrip for the purpose of establishing an agricultural college or colleges in said state; and,

WHEREAS, The said land-scrip has been sold, and there is now in the state treasury, to the credit of the agricultural college fund, the sum of $342,450.80; and,

WHEREAS, One of the provisions of the act of congress making such donation, requires each state which may claim the benefit of said act, to provide not less than "one

college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life;" and,

WHEREAS, The time for providing such college or colleges will expire on the 2d day of July, 1872, at which time, unless such college or colleges are provided, the grant to the state of Ohio will cease, and said state will be bound to pay the United States the amount so received; therefore, be it

Resolved [*by the General Assembly of the State of Ohio*], 1st. That it is important for the general assembly of Ohio to take immediate steps to provide one college for the objects and purposes aforesaid.

2d That to this end a joint committee of the senate and house of representatives, consisting of four on the part of the senate and eight on the part of [the] house be appointed, with authority to receive propositions for sites for the location of such college, and examine the same; also propositions for experimental farm, and proposals of donations of such sites and farms; and also donations towards the erection of suitable college buildings.

3d. That the said committee shall have authority to meet, for the transaction of business, during any adjournment of the general assembly, at such time and place as the committee may agree upon.

4th. That the said committee shall report, at as early a time as possible, by bill or otherwise.

Adopted March 30, 1868. [65 v. 292.]

The committee, at the ensuing session, reported propositions for location from Worthington, Wooster, Oxford, Urbana, London, and Newark, with liberal offers of donations of land and money from each of the competing towns. Majority and minority reports were brought in, the former recommending the acceptance of the proposition of Urbana, and the latter of Wooster.

Neither report secured favorable action in the Legislature. Various attempts to settle the questions involved were afterwards made without success, until, in March 22, 1870, a bill was passed by the Legislature, the date of which may be taken as the initial date of the present institution.

Before that date, however, the following legislation was had:

AN ACT.

To authorize the investment of interest accumulating on the agricultural college fund.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That the auditor of State be and is required to compute the interest which has accrued and will accrue on the agricultural college scrip fund since the same has been sold, to July first, one thousand eight hundred and seventy, compounding the same by semi-annual rests on the first day of January and the first day of July in each year; and on the fifteenth day of June, eighteen hundred and seventy, to transfer the sum so arising to the said college fund, and invest the same in the interest bearing bonds of the state, in the same manner as the principal of the said fund is now invested.

SEC. 2. That on the first day of July, eighteen hundred and seventy, and every six months thereafter (viz., on the first day of January and July respectively), the auditor of state shall invest the interest of said funds falling due in the same manner as the principal is now invested.

SEC. 3. This act to take effect and be in force from and after its passage.

Passed February 10, 1870. [67 v. 15.]

The following is the act referred to as constituting the initial date of the College:

AN ACT

To establish and maintain an agricultural and mechanical college in Ohio.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That a college, to be styled the Ohio Agricultural and Mechanical College, is hereby established in this state, in accordance with the provisions of an act of congress of the United States, passed July 2d, 1862, entitled "an act donating public lands to the several states and territories which may provide colleges for the benefit of agricultural and mechanic arts," and said college to be located and controlled as hereinafter provided. The leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agricultural and mechanic arts.

SEC. 2. The government of said college shall be vested in a board of trustees, to consist of one from each congressional district of this state, who shall be appointed by the governor, by and with the advice and consent of the senate. The president of the state board of agriculture shall be ex-officio member of said board. [*Repealed April* 16, 1874.]

SEC. 3. The members of the board of trustees, and their successors, shall hold their office for the term of six years each; provided, that at the first regular meeting of said board, the said members shall determine by lot, so that as nearly as may be one-third shall hold their office for two years, one-third for four years, and one-third for six years from the date of the first meeting of the board, or until their successors are appointed and qualified. In case a vacancy occurs by death, resignation or otherwise, the appointment shall be for the unexpired term. The trustees shall receive no compensation for their services, but shall be entitled to reasonable and necessary expenses while in the discharge of their official duties. [*Repealed April* 16, 1874.]

SEC. 4. The trustees and their successors in office shall be styled the "Board of trustees of the Ohio Agricultural and Mechanical College," with the right as such of suing and being sued, of contracting and being contracted with, of making and using a common seal, and altering the same at pleasure.

SEC. 5. The board of trustees shall have power to adopt by laws, rules, and regulations for the government of said college; to elect a president; to determine the number of professors and tutors, elect the same, and fix their salaries. They shall also have power to remove the president or any professor or tutor whenever the interests of the college, in their judgment, shall require; to fix and regulate the course of instruction, and to prescribe the extent and character of experiments to be made.

SEC. 6. The board of trustees shall annually appoint an executive committee of not less than three of their own members, who, when said board is not in session, shall have the management and control of the affairs of said college, under the direction of the board, and shall furnish a full report of their proceedings at every regular meeting of the board, and at such other times as the board may direct. [*Repealed April* 16, 1874.]

SEC. 7. The college shall be open to all persons over fourteen years of age, subject to such rules and regulations and limitations, as to members from the several counties of the state, as may be prescribed by the board of trustees; provided that each county shall be entitled to its just proportion, according to its population. The board may provide for courses of lectures, either at the seat of the college or elsewhere in the state, which shall be free to all.

SEC. 8. The board of trustees shall have the general supervision of all lands, buildings, and other property belonging to said college, and the control of all expenses therefor: provided always that said board shall not contract any debt not previously authorized by the general assembly of the state of Ohio.

SEC. 9. The board of trustees shall annually elect one of their number chairman, and in the absence of the chairman shall elect one of their number temporary chairman, and shall have power to appoint a secretary, treasurer, and librarian, and such other officers as the interests of the college may require, who may or may not be members of the board, and shall hold their offices for such term as said board shall fix, subject to removal by said board, and shall receive such compensation as the board shall prescribe. The treasurer shall, before entering upon the duties of his office, give bond to the state of Ohio in such sum as the board may determine, which bond shall not be for a less sum than the probable amount that will be under his control in any one year, conditioned for the faithful discharge of his duties and the payment of all moneys coming into his hands, said bond to be approved by the attorney general of the state.

SEC. 10. The board of trustees shall have power to secure a collection of specimens in mineralogy, geology, zoölogy, botany, and other specimens pertaining to natural history and the sciences; and it shall be the duty of the chief geologist of the state to collect and deposit in such place as the trustees may direct, a full and complete set of specimens as collected by him or his assistants, for the benefit of said college. The board shall make provision for a library, apparatus, and arms and accoutrements, and for increasing and preserving the same. [*Repealed April* 20, 1877.]

SEC. 11. The board of trustees shall have power to receive and hold in trust, for the use and benefit of the college, any grant or devise of land, and any donation or bequest of money or other personal property, to be applied to the general or special use of the college; all donations or bequests of money shall be paid to the state treasurer, and invested in the same manner as the endowment fund of the college, unless otherwise directed in the donation or bequest.

SEC. 12. The first meeting of the members of the board shall be called by the governor as soon after the appointment of said board as he may deem advisable, to be held at Columbus, Ohio; all succeeding meetings shall be called in such manner as said board may prescribe; said board shall meet at least once annually at the college building. A majority of the board of trustees shall constitute a quorum to do business; provided, it shall require a majority of all the board to elect or remove a president or professor. [*Repealed April* 20, 1877.]

SEC. 13. The title for all lands for the use of said college, shall be made in fee simple to the state of Ohio, with covenants of seizin and warranty, and no title shall be taken to the state for purposes aforesaid until the attorney general shall be satisfied that the same is free from all defects and incumbrances.

SEC. 14. The board of trustees shall cause a report to be made annually to the governor, of the condition of said college; the amount of receipts and disbursements, and for what the disbursements were made; the number of professors, teachers, and other officers, and the position and compensation of each; the number of students in the sev-

eral departments and classes, and the course of instruction pursued in each; also, an estimate of the expenses of the ensuing year; a full transcript of the journal of the proceedings of the board for the past year, the progress of said college, recording any improvements and experiments made, with their cost, and the results, and such other matters as may be supposed useful; one copy, when printed and bound, shall be transmitted by mail, free, to all other colleges which may be endowed under the provisions of said act of congress, and also one copy to the secretary of the interior. [*Repealed April* 20, 1877.]

SEC. 15. The attorney general of the State shall be the legal adviser of said board of trustees, and he shall institute and prosecute all suits in behalf of the same, and shall receive the same compensation therefor as he is entitled to by law for suits brought in behalf of the asylums of the state.

SEC. 16. All funds, together with the interest now accumulated thereon, derived from the sale of land scrip issued to the state of Ohio by the United States in pursuance of the act of congree aforesaid, shall be invested in registered bonds of the state of Ohio, or of the United States, by the authority now having control of the same; which bonds shall be and remain in the custody of the state treasurer intact, unless one-tenth shall be appropriated by the general assembly for the purchase of land, as provided in the act of congress, who shall pay over the income thereof as it may accrue to the treasurer of said college upon the order of the auditor of state, made upon the requisition of the board of trustees; to be by the board of trustees appropriated to the endowment, support, and maintenance of the college, as provided in the act of congress as aforesaid. [*Repealed April* 20, 1877.]

SEC. 17. It shall be the duty of the board of trustees to permanently locate said Agricultural and Mechanical College upon lands, not less than one hundred acres, which in their judgment is best suited to the wants and purposes of said institution, the same being reasonably central in the state, and accessible by railroad from different parts thereof, having regard to healthiness of location, and also regarding the best interests of the college in the receipt of moneys, lands or other property donated to said college by any county, town or individual, in consideration of the location of said college at a given place: Provided, it shall require a three-fifths vote of the trustees to make said location; and provided further, that said location shall be made on or before the fifteenth day of October, 1870; provided further, that any person acting as a trustee, who shall accept or receive, directly or indirectly, any sum or amount from any person or persons, to use their influence in favor of the location of said college at any particular point or place, shall held to be guilty of a misdemeanor, and on conviction thereof by any court of competent jurisdiction, shall be fined in any sum not less than one thousand nor more than ten thousand dollars; provided further, that in the location of said college the said trustees shall not in any event incur any debt or obligation exceeding forty thousand dollars; and if, in their opinion, the interests of the college can not be best promoted without a larger expenditure for the location than that sum, then they may delay the permanent location of the same until the third Monday of January, 1871, and report their proceedings and conclusions to the general assembly; provided further that said college shall not be located until there are secured thereto for such location, donations in money or unincumbered lands at their cash valuation, whereon the college is to be located, or in both money and such lands, a sum equal to at least one hundred thousand dollars.

SEC. 18 This act shall take effect and be in force from and after its passage.

Passed March 22, 1870. [67 v. 20.]

Under this act a board of nineteen Trustees was appointed by Governor R. B. Hayes, and his appointments were confirmed by the Senate. The following gentlemen composed the Board, arranged in the order of their Congressional Districts:

1st	District	Aaron F. Perry.
2d	"	Joseph F. Wright.
3d	"	Richard C. Anderson.
4th	"	William B. McClung.
5th	"	William Sawyer.
6th	"	James M. Trimble.
7th	"	Joseph Sullivant.
8th	"	Thomas C. Jones.
9th	"	Warren P. Noble.
10th	"	James W. Ross.
11th	"	Ralph Leete.
12th	"	Daniel Keller.
13th	"	Marvin M. Munson.
14th	"	Norton S. Townshend.
15th	"	Valentine B. Horton.
16th	"	John C. Jamison.
17th	"	Cornelius Aultman.
18th	"	John R. Buchtel.
19th	"	Henry B. Perkins.

The Board held its first meeting in Columbus on May 11, 1870, and effected a permanent organization by the election of Valentine B. Horton, President; R. C. Anderson, Secretary; and Joseph Sullivant, Treasurer.

By the following legislative act, passed April 18, 1870, the several counties of the State were authorized to raise money to secure the location of the College:

AN ACT

To authorize the several counties of the state to raise money to secure the location of the Ohio Agricultural and Mechanical College.

SECTION. 1. *Be it enacted by the General Assembly of the State of Ohio,* That the commissioners of any county in this state desiring to secure the location of the Ohio Agricultural and Mechanical College by making donations therefor, are hereby authorized and empowered to raise money for such donation by tax on all taxable property in such county, as listed on the county duplicate for taxation, the amount of which proposed donation shall be fixed by said commissioners.

SEC. 2. That such tax shall not exceed two mills on the dollar of the taxable property of the county in any one year, nor shall the aggregate of all levies for such purposes exceed ten (10) mills on the dollar.

SEC. 3. No such tax shall be levied or donation made until the question as to the amount to be donated has first been submitted by the county commissioners to the qualified voters of such county at some general or special election, a notice of which (specifying the amount to be donated) has been given at least thirty days previous to said

election, in one or more newspapers published and in general circulation in the county; which election shall be held at the usual places of holding elections, and conducted in all respects, as far as may be, as other elections, except that the returns shall be made to the county commissioners, at the auditor's office; and those voting at such election in favor of said tax, shall have written or printed on their ballots the words "College Tax—Yes," and those voting against same, the words "College Tax—No." And said commissioners shall meet at said auditor's office on the fourth day next after the said election, and canvass the votes; and if it appear that said tax is approved by a majority of the qualified electors voting at such election, then it is hereby made the duty of the county commissioners of said county to levy a special tax on all the taxable property of said county, to raise the sum donated by said vote, in accordance with section two of this act; and the money arising therefrom, when collected, shall be applied to no other purpose but the payment of bonds and interest as hereinafter provided for; and said special tax shall be entered upon the county duplicate, and be collected in like manner as other taxes are collected.

SEC. 4. That to anticipate the collection of the tax authorized by this act, and the use of the money to be raised thereby, the county commissioners, on the acceptance of the donation herein contemplated, are hereby authorized and required to issue and negotiate the bonds of such county, in sums of not less than five hundred dollars each, payable (within ten years) at such times, and bearing interest at a rate not exceeding eight per cent., payable semi-annually, as the commissioners shall determine, which bonds shall not be sold or donated at less than their par value; and the proceeds thereof shall, on their receipt, be paid by said commissioners to the treasurer of said college to the amount of said donation.

SEC. 5. This act shall take effect and be in force from and after its passage.

Passed April 18, 1870. [67 v. 95.]

On June 4 of the same year the Executive Committee of the Board of Trustees issued an address to the people of the State, prepared by Hon. V. B. Horton, President of the Board, and chairman of said committee, setting forth the aims, purposes, and wants of the Ohio Agricultural and Mechanical College, and inviting the citizens of the State, through their counties, to raise the necessary funds for providing land, buildings, and outfit for the College.

The following named counties competed for the location under the above act: Champaign, Clarke, Franklin, Montgomery.

Champaign county offered $200,000, in 8 per cent. county bonds; Clarke offered the same amount; Franklin offered $300,000, in 7 per cent. bonds, and Montgomery offered, by pledges of several of her prominent citizens, $400,000, in 8 per cent. bonds. After prolonged and thorough discussion, the proposition of Franklin county was accepted, and on October 13, 1870, the College was located within the limits of the city of Columbus, on a farm of about 317 acres of excellent land. The donation from Franklin county was increased by contributions from citizens of Columbus, and by two of the railroads entering here, to the amount of about $28,000 The railroad companies contributing were the Cleveland, Col-

umbus and Indianapolis Railroad, and the Pittsburgh, Cincinnati and St. Louis Railroad.

A site for a College building was selected, and architects were invited to furnish plans for such building. The plan prepared and offered by Mr. Jacob Snyder, of Akron, was finally adopted, and the building was put under contract, to be completed in 1872, at a cost of $112,450. A boarding-hall and dormitory was also ordered, at an estimated cost of $20,000, at a somewhat later date. A second dormitory, providing accommodations for twenty students who may desire to board themselves, has been since erected.

The character of the College building can be learned from the following description by the architect:

The Agricultural and Mechanical College of Ohio is designed, when completed, to be a three-story building, besides the basement and attic, and is to be of brick, with stone dressings, above the basement story. The latter is to be entirely of stone, elevated seven feet nine inches from the grade line, thus admitting ample light to accommodate the lower apartments. The attic story extends partly into the roof space, and is well lighted by means of gable windows. The plan of the building is made up of a central building having two connecting and two terminal wings. The central building is sixty-seven feet front by one hundred and nine feet deep, including the projection of the main tower on the front, which is eight feet from the face of the front wall. The main tower has a base of twenty-one feet six inches square besides the projections of buttresses, and a height of one hundred and four feet to the top of crown. The central building is flanked by the two connecting wings, which are forty-one feet front by fifty-eight feet deep. The height of the connecting and terminal wings, except their roofs, is equal, and from grade line to top of crown is fifty-four feet and nine inches The height of the central building from corresponding points is fifty-eight feet three inches. The front portion of central wing, on its first main floor, contains the office and reception room, the College library room, and their complemental apartments. The upper stories of this portion of the central building are to be occupied by recitation and professors' rooms.

The rear of the central building contains two large amphitheatres of fifty-one by sixty-seven feet, occupying the entire height of the three principal stories. The elevated roof of this portion of the building affords sufficient height to admit of two society halls in the attic, so arranged as to be used conjointly for the purposes of one large hall if desired. The connecting wings, besides their complemental apartments, contain professors' rooms in all their principal stories. The terminal wings have no divisions above the basement, the rooms being the entire size of the wings within their walls. They are designed to be used as recitation and work-rooms. The apartments of the basement not required for heating are designed to be used for purposes similar to those of the terminal wings.

The building, including the projections of the buttresses, has a frontage of two hundred and thirty-five feet, and will accommodate from four to five hundred students.

The dormitory and boarding-hall provides accommodations for seventy-five students.

The plan of study to be pursued in the College was made the subject of very earnest discussion in the Board of Trustees from the date of its organization. Quite divergent views were at first held by different members, but on January 6, 1871, they united in adopting the general plan presented and advocated by Joseph Sullivant, Esq., of Columbus. This plan had for its aim the establishment of a scientific school of a liberal character. The following departments were included in it:

1. Agriculture.
2. Mechanic Arts.
3. Mathematics and Physics.
4. Chemistry.
5. Geology, Mining, and Metallurgy.
6. Zoölogy and Veterinary Science.
7. Botany and Horticulture.
8. English Language and Literature.
9. Modern and Ancient Languages.
10. Political Economy and Civil Polity.

It was not designed in the action taken that these subjects should necessarily stand in the same connections in which they are here placed, but only that the general range of instruction thus indicated should be offered by the College. In point of fact, but few of the departments have been permanently established within the limits named above, but all of these subjects, and more, are now taught in the College, as will presently appear. To Mr. Sullivant was also assigned the equipment of laboratories and cabinets, a fund of $25,000 being set aside for this general purpose, including the necessary furniture of the building. It is but justice to add that to his intelligent and unselfish interest the College owes a large debt, both for the breadth of its plan of organization and the equipment with which its departments have been supplied.

The two following acts find place here:

AN ACT

To provide for an appropriation from the Agricultural and Mechanical College Fund, and authorizing the deposit in the State Treasury of certain bonds.

WHEREAS, The board of trustees of the Ohio agricultural and mechanical college has bargained for the purchase of several tracts of land in Franklin county, Ohio, the payment for a part of which is to be made in money, and they have not the money with which to make such payment; and whereas said board holds the seven per cent. coupon bonds of Franklin county to a large amount, issued in pursuance of an "act to authorize the several counties of the State to raise money to secure the location of the Ohio agricultural and mechanical college," passed April 18, 1870 (67 O. L., p. 95), and upon which bonds said board can not at this time realize an amount of money sufficient to pay for such purchase without great sacrifice thereon; therefore,

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That there be and hereby is appropriated from and out of the Ohio agricultural and mechanical college

fund the sum of thirty-four thousand two hundred and forty-five dollars, being an amount equal to and not exceeding ten per centum upon the principal of said fund as derived from the sale of land scrip received by the state of Ohio under and by virtue of an "act of Congress donating lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," approved July 2, 1862; this appropriation being made for the purpose of paying for lands purchased as referred to in the preamble of this act.

SEC. 2. That before any of said money shall be drawn from the treasury, the said board of trustees shall deposit with the treasurer of state said bonds of Franklin county equal in amount to the amount appropriated in the foregoing section, to be credited to the agricultural and mechanical college fund, and the coupons of which, as they become due, shall be collected by said treasurer of state and placed to the credit of said college fund as soon as such deposit shall have been made. The trustees of said college are authorized to make requisitions for the amount of money above appropriated, and the treasurer of state is required to pay the same upon presentation of proper vouchers as required by law, and said board shall use the same in payment for the purchase above specified in accordance with the provisions of the act of Congress before referred to: provided, that the said college fund shall be reimbursed in the sum of thirty-four thousand two hundred and forty-five dollars with interest above appropriated, whenever the said bonds referred to in this act shall have matured and been paid. If said bonds shall not be paid at maturity, the treasurer of state shall proceed to collect or sell the same at par value and apply the proceeds thereof to the reimbursement of said fund; and provided further, that no warrant shall be issued by the auditor of state for the payment of any money appropriated by the provisions of this act, until the executive committee of said board of trustees have filed their certificate with the said auditor that the commissioners of Franklin county have fully executed their contract with said board in reference to the donation of three hundred thousand dollars by said county to said agricultural and mechanical college; provided still further, that this act shall not be construed to operate as a guaranty by the state of the payment of the said bonds of Franklin county, or as creating any obligation on the part of the state to repay to said fund any part of the sum herein appropriated beyond the amount that may be realized on said bonds.

SEC. 3. This act to take effect on its passage.

Passed January 20, 1871. [68 v. 13.]

AN ACT

Prescribing the duties of the trustees of the Ohio Agricultural and Mechanical College, in relation to the erection of buildings and making other improvements upon the grounds purchased for the location of said college.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That before any contract shall be made for the erection of any building for the Ohio agricultural and mechanical college, the executive committee of the board of trustees shall cause to be made full and accurate plans of such buildings in detail, with proper working plans and full specifications of the work, showing the manner and style in which the same will be required to be done, and to make or cause to be made a full and complete estimate o each item of expense, and the entire aggregate cost of such building, and submit the same to the board of trustees of said college for approval; and if the same are approved at a meeting of said board, contracts may be made in pursuance thereof; provided, they are drawn and approved by the attorney-general; provided further, that in all cases of contracts involving an expenditure of five thousand dollars, or any larger sum, either for labor or materials for any of the college buildings, the trustees shall cause notice to

be published for not less than three weeks, of the time and place when and where sealed proposals will be received for performing such labor or furnishing such materials, and where plans and specifications of the work to be done, or a description of the materials to be furnished, may be seen; and it shall be the duty of the trustees, or the executive committee, to award such contract or contracts to the lowest bidder or bidders, who shall give satisfactory security to perform the work or furnish the materials in accordance with the plans, specifications and descriptions as herein required, if, in the judgment of the trustees, or the executive committee, such persons are able and competent to perform such labor or furnish such materials, in accordance with the terms of the proposed contracts and the provisions of this act. In case no bids shall be received upon the publication of such notice complying in all respects with the provisions of this act, the trustees, or the executive committee, may cause such work to be done or materials to be furnished by other parties, subject to the conditions of this act; and no officer of said institution shall be directly or indirectly interested in said contract or contracts.

SEC. 2. No contract shall be made for labor or material as herein provided at prices in excess of the estimates in this act required to be made, or in excess of the ordinary and prevailing market prices for such labor or materials.

SEC. 3. No contract shall be made, plans adopted, or liability incurred for the erection of any building, or for other improvements on the college farm, or for the purchase of stock or implements, involving in the aggregate a greater expenditure of money than the amount remaining of the Franklin county subscription, after the payment of the purchase money for the lands bought for the use of the college; nor shall said trustees contract any debt for any purpose in excess of the money provided for its payment.

SEC 4. This act shall take effect on its passage.

Passed April 12, 1871. [68 v. 56.]

The selection of a Faculty commanded the early attention of the Board. On March 10, 1871, a virtual offer of the presidency of the institution was made to General Jacob D. Cox, of Cincinnati, but the offer was declined. The committee on Faculty next reported the name of Hon. James W. Patterson, formerly professor in Dartmouth College, and, at the time representing New Hampshire in the Senate of the United States, for this position. Mr. Patterson was elected to the office on October 10, 1872, but after holding the matter for some time under advisement, he also declined the appointment.

The following named gentlemen were elected professors at a meeting of the Trustees held on January 2, 1873:

Thomas C. Mendenhall, of Columbus, Professor of Physics and Mechanics.
Sidney A. Norton, of Cincinnati, Professor of General and Applied Chemistry.
Edward Orton, of Yellow Springs, Professor of Geology, Mining, and Metallurgy.
Joseph Millikin, of Hamilton, Professor of English and Modern Languages.
W. G. Williams, of Delaware, Professor of Latin and Greek Languages.

At the same meeting of the Trustees, but at a somewhat later date, Norton S. Townshend, of Avon, was elected Professor of Agriculture, he having previously resigned his position on the Board of Trustees to accept it.

Professors Mendenhall, Norton, Millikin, and Townshend accepted their appointments. Professor Williams also signified his acceptance, but was subsequently released at the request of the Trustees of the Ohio Wesleyan University, with which he was at the time connected. Professor Orton declined the Professorship of Geology, but in April succeeding the Presidency of the institution was offered to him, which he accepted in May. The Professorship of Geology was also assigned to him.

During the summer of 1873, Professor R. W. McFarland, of Oxford, was called to the Professorship of Mathematics, and the subject of Civil Engineering was also assigned to his department.

Mr. John H. Wright, a recent graduate of Dartmouth College, was appointed Assistant Professor in the Department of Languages, and to him were assigned all of the classes in Latin and Greek.

The College was opened for the reception of students on September 17, 1873.

In January, 1874, Prof. Albert H. Tuttle was appointed by the Executive Committee to the chair of Zoölogy, and in June the appointment was confirmed by the Board. At the same time, Thomas Mathew, of Columbus, was appointed Instructor in Drawing, Free-hand and Mechanical, and also in Photography and Lithography. In June, 1875, William Colvin, of Cincinnati, was appointed Professor of Political Economy and Civil Polity, and the Science of Accounts was also assigned to his department. Miss Alice Williams was, at the same time, made an assistant in the Department of English and Modern Languages.

A single section of an act pertaining to the State Geological Survey here finds place:

AN ACT

To complete the Geological Survey of the State of Ohio.

SEC. 7. The geological board shall see that the minerals, soils, and fossils of the state, collected during the survey, be properly classified and labeled by the geologists or such paleontologists as may be employed, and given to the Agricultural and Mechanical College of Ohio, and duplicates, as far as practicable, to each other college in the state authorized by its charter to confer degrees, and possessing a geological department and employing a professor of geology. [Act of April 29, 1872; 69 v. 202.]

Three acts relating to the sale of unsurveyed lands in the Virginia Military District of Ohio are next introduced—the first two, which have been subsequently repealed, by title only:

AN ACT

To sell land ceded to the State by the United States, by act of Congress, approved February 19th, 1871.

Passed March 26, 1872. [69 v. 52.]

AN ACT

Supplemental to, and amendatory of, the act entitled "An act to sell lands ceded to the State of Ohio by the United States, by act of Congress approved February (19) 18, 1871, passed March 26, 1872.

Passed April 29, 1872. [69 v. 204.]

Repealed April 3, 1873.

AN ACT

Accepting the act of Congress of the United States, approved February 18, 1871, ceding to the State of Ohio certain lands in the Virginia Military District, and to provide for the disposal of the same, and to repeal certain acts hereinafter mentioned.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That the unsurveyed and unsold lands ceded to the state of Ohio by a certain act of congress of the United States, approved February 18th, 1871, situate and being in the Virginia Military District between the great Scioto and the Little Miami rivers, in said state, be and the same are hereby accepted by the state of Ohio, subject to the provisions of said act.

SEC. 2. That the trustees of the Ohio Agricultural and Mechanical College are hereby authorized to demand from all persons who have destroyed or converted any timber growing upon the lands ceded to the state of Ohio, as stated in the act to which this is supplementary, since the date of said act of congress ceding said lands to the state of Ohio, full compensation for the timber so destroyed or converted, and for all damages, and if payment shall be refused, to institute proper proceedings in the name of said Ohio Agricultural and Mechanical College, in any court of competent jurisdiction, to recover the same, with damages and the cost of suit: provided, that the provisions of this section shall not apply to timber taken from the one hundred and sixty acres by any person who shall obtain the title to the same under section three of this act.

SEC. 3. The title of said lands is hereby vested in the trustees of the Ohio Agricultural and Mechanical College, for the benefit of said college; and said trustees are hereby required to cause a complete survey of said lands to be immediately made, and a correct plat thereof to be returned to said trustees, and to ascertain and set off, in reasonably compact form, by accurate boundaries to each occupant who was in actual possesion of and living upon any of said lands at the time of the passage of said act of congress, as provided therein, or their heirs and assigns, a tract not exceeding forty acres; and upon the payment, by the claimant, of the cost of surveying and making the deed, the said trustees shall make and deliver to said claimant a deed for said tract; and if any such occupant shall have been in such actual possession of more than forty acres, and is desirous of holding the same, he shall be entitled to have, in addition to said forty acres, any number of acres not exceeding, with said forty acres, the number of one hundred and sixty acres, to be in reasonably compact form, by paying for the said excess over forty acres, the sum of one dollar per acre; and if any claimant under the provisions of this act shall desire to purchase any tract of land adjoining said forty acres, not exceeding, including said forty acres, the amount of one hundred and sixty acres, of which said claimant shall have been in actual possession, but does not desire to purchase the same at one dollar per acre, said trustees, upon notice by said claimant, shall cause said tract or part of tract to be sold separate from other tracts of land at a valuation fixed upon by the appraisers named in this act, payable one-third at the date of the survey, and the residue in two equal annual installments, with interest at six per cent., payable annually, and upon full payment being made with the cost of survey and conveyance, said trustees shall make and deliver to such claimant, his or her heirs or assigns, a deed for said excess over said forty acres: provided, that any person claim-

ing the benefit of the provisions of this section as occupant, shall comply in all respects with, and be subject to the provisions of the thirteenth section of the act of congress, approved September 4, 1841, entitled an act to appropriate the proceeds of the sales of the public lands and to grant pre-emption rights, and to the rules and regulations of the general land office of the United States relating to proof for the establishment of pre-emptor's claims: provided, however, that the affidavit required by said thirteenth section of said act of congress may be made before any justice of the peace or other officer authorized to administer oaths.

SEC. 4. All the unsurveyed and unsold lands in said military district, not occupied as aforesaid, shall be divided by said trustees into such tracts, not exceeding five hundred acres in any one boundary, as will be most advantageous, reference being had to the quality of said lands and the uses to which they will be applied; the boundaries to all such tracts and divisions shall be accurately surveyed, and the lines of each tract plainly marked, and substantial stone monuments firmly placed at the principal corners. The character of the soil, water-courses, elevation of hills, timber, ledges, or stratas of the Waverly building stone, iron ore, fire-clay, and limestone, shall be fully noted by the surveyors on their plats and in their field-books. All the tracts so divided and surveyed shall be numbered in consecutive order, commencing with the tracts in Adams county, and so continuing until all said lands in said district shall be platted and numbered; which numbers shall be shown upon the plats, and the said plats shall correctly indicate all township lines. The said lands, when so divided, surveyed, and numbered, shall be appraised in separate tracts at their true value in money, by three qualified freehold residents in said state, to be summoned by said trustees, or any committee of theirs. Said appraisers, before entering upon their duties, shall take and subscribe an oath before competent authority honestly and impartially to appraise all such lands, and to perform all other duties in relation thereto; they shall each be paid two dollars a day for their services, and their expenses allowed them; they shall make due return of all their appraisements to said trustees, which, with all said plats and surveys, shall be delivered by them to the auditor of state, and the same shall be recorded in the office of said auditor in suitable books to be provided for such purpose, which, with all such original plats, surveys, and papers, shall form a part of the public records of the state in the land department of said office.

SEC. 5. And the said trustees are hereby authorized and required to sell all of said lands at public or private sale, at a price not less than the appraised value thereof, on such terms for cash and credit as may be agreed upon between the purchaser and said trustees or any authorized agent of theirs: provided, that the first payment shall, in every case, be not less than one-third of the appraised value of such tract; all deferred payments shall bear six per cent. interest, to be paid annually, and said trustees may, in their discretion, extend subsequent annual payments through a period not exceeding five years. All public sales of said lands shall be by auction, at the front door of the court-house of the county in which these lands so offered lie, after having been advertised five consecutive weeks in a newspaper published and generally circulated in such county; such notices of sale shall contain a sufficient description of the premises to clearly identify the same, with a statement of the terms of payment and the amount of appraisement, and all such public sales shall be made at such times as said trustees shall deem expedient; and in case such land or any tract thereof shall not sell for the amount of the appraisement at such public sale, then upon the same being again offered as aforesaid at public sale, the same may be sold for any sum not less than three-fourths of the appraisement: provided, that no trustee of said college or appraiser of said land

shall be the purchaser of any of said lands at any such sale or sales, either directly or indirectly. The said trustees shall cause all contracts for the sale of said lands to be printed or written in a book or books, stating the consideration and terms of all sales, which said contracts shall be signed in duplicate by the said trustees or any authorized agent of theirs, and by the purchaser or purchasers, one copy of which shall be preserved in said book, and the other shall be delivered to the purchaser at the time the same shall be signed; and every purchaser shall execute his promissory note or notes, with interest, payable as aforesaid, for all deferred payments, which notes shall be non-negotiable, and payable to said college at such place or places as may be directed by said trustees; and upon full payment being made by the purchaser, his heirs or assigns, for any such land, every such person shall be entitled to receive a conveyance therefor in fee simple by deed of said trustees, executed by the president of the board, under the corporate seal of said college; and all lands disposed of under the provisions of this act shall be returned by said trustees to the auditors of the counties in which they are situate, and by them be placed on the duplicate for taxation.

SEC. 6. The proceeds of the sales of all such lands, after payment out of the same of all the necessary expenses of survey and sale, shall be certified into the treasury of said state as provided by law, and the same be placed to the credit of the irreducible fund of said college, and shall form a part of said irreducible debt of the state, on which interest shall be computed semi-annually, and paid to said college as may be ordered by the board of trustees; and they shall annually report to the governor a detailed statement of receipts and disbursements in the execution of the trusts created under the provisions of this act.

SEC. 7. The act entitled an act to sell lands ceded to the state of Ohio by the congress of the United States, by act of congress approved February 18, 1871, passed March 26, 1872, and the act supplementary thereto and amendatory thereof, passed April 29th, 1872, be and they are hereby repealed: provided, that the passage of this act shall in no wise affect the validity of the transactions of said board of trustees, or rights vested in any person, under the provisions of said acts; and this act shall take effect and be in force from and after its passage.

Passed April 3, 1873. [70 v. 107.]

Early in 1874 a reorganization of the Board of Trustees was effected by the passage of

AN ACT

To amend the act entitled "An act to establish and maintain an Agricultural and Mechanical College in Ohio," passed 22d March, 1870. (O. L., Vol. 67, p. 20.)

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That the second section of the act entitled an act to establish and maintain an agricultural and mechanical college in Ohio, passed March 22, 1870 (67 O. L., 20), be and the same is hereby so amended as to read as follows:

Section 2. The government of said college shall be vested in a board of trustees to consist of five members, who shall be appointed by the governor of the state of Ohio, by and with the advice and consent of the senate. No trustee, or relation of any trustee, by blood or marriage, shall be elected or appointed to a professorship or any other office or position in the college, the compensation for which is to be paid out of the state treasury or the agricultural and mechanical college fund, except upon the approval of the governor.

SEC. 2. That section three of said act be so amended as to read as follows:

Section 3. The members of the board of trustees and their successors shall hold their office for the term of five years from the first day of May, 1874: Provided, that one of said trustees shall hold his office for one, one for two, one for three, one for four and one for five years, said terms to be designated by the governor in making said appointments, and at the expiration of the first year, and every successive year thereafter, one trustee for five years shall in like manner be appointed. In case any vacancy occurs, by death or otherwise, the appointment shall be for the unexpired term. The trustees shall receive no compensation for their services, but shall be entitled to reasonable and necessary expenses while in the discharge of their official duties.

SEC. 3. Sections two, three and six of said act are hereby repealed.

SEC. 4. This act shall take effect from and after the first day of May, 1874.

Passed April 16, 1874. [71 v. 78.]

Repealed April 20, 1877.

Under this act, the following named gentlemen were appointed by Governor William Allen and confirmed by the Senate:

Ralph Leete	Lawrence county.
Alexander Waddle	Clarke county.
Warren P. Noble	Seneca county.
William Larwill	Crawford county.
Joseph Sullivant	Franklin county.

In June, 1876, Assistant Professor John H. Wright, for the purpose of pursuing his studies in Europe, resigned the place which for three years he had satisfactorily filled. To the position thus vacated Josiah R. Smith, A.B., a graduate of Amherst College, and at this time an assistant teacher in the Columbus High School, was appointed. In the same year First Lieutenant Luigi Lomia, of the Fifth United States Artillery, was, pursuant to the request of the Board, detailed by the Secretary of War to take charge of the military instruction which the institution is required to give. These gentlemen entered upon the discharge of their duties at the opening of the fall term in the above named year.

The Board of Trustees made military drill obligatory on the part of all the young men of the College except those who should be excused on account of religious scruples or physical disability, and the War Department of the United States furnished arms, ammunition, and accoutrements to supply all demands.

A second reorganization of the Board of Trustees was effected in April, 1877, by the passage of the following act, under an ungrammatical title, viz:

AN ACT

To regulate the Ohio Agricultural and Mechanical College in Ohio, and to repeal certain acts therein named.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That immediately after the passage of this act, the governor, with the advice and consent of the senate,

shall appoint a board of trustees of the Ohio Agricultural and Mechanical College, located at Columbus, Ohio. Said board shall consist of one from each congressional district of the state of Ohio. The government of said college shall be vested in said board of trustees. The governor shall have power to make said appointments when the senate is not in session, and in case the senate is not in session at the time of making said appointments, the trustees so appointed shall proceed to act upon the certificate of the governor, and such nomination shall be submitted to the senate at its next session.

SEC. 2. The members of said board of trustees, and their successors, shall hold their office for the term of six years each; provided, that at the first regular meeting of said board the members thereof shall determine by lot their respective terms of office, so that, as nearly as may be, one-third shall hold their office for two years, one-third for four years, and one-third for six years from the date of the first meeting of the board, or until their successors are appointed and qualified. In case a vacancy occurs, by death, resignation, or otherwise, the appointment shall be for the unexpired term. The trustees shall receive no compensation for their services, but they shall be entitled to their reasonable and necessary expenses while occupied in the discharge of their official duties. No trustee, nor relation of any trustee by blood or marriage, shall be elected or appointed to a professorship, or any other official position in the college, or to any place of trust in connection with any monetary interest of the college, the compensation of which is to be paid out of the state treasury, or the agricultural and mechanical college fund, except upon the approval of the governor.

SEC. 3. The said board of trustees shall annually appoint an executive committee, to consist of not less than three nor more than five of their own number, who, when the said board is not in session, shall have the management and control of the affairs of said college, under the direction of said board, and they shall furnish to the board, at every regular meeting thereof, or oftener if required by said board, a full report of their proceedings in the management and control of said college.

SEC. 4. The board of trustees shall have power, and it is hereby made their duty, to secure and keep in the said college a collection of specimens in mineralogy, geology, zoölogy, botany, and other specimens pertaining to natural history and the sciences; and it shall be the duty of the chief geologist of the state to collect and deposit in the said college, in such manner as shall be directed by the trustees, a full and complete set of specimens as collected by him and his assistants, together with a brief description of the character of the same, and where obtained; and the said specimens shall be properly classified and kept for the benefit of said college.

SEC. 5. The first meeting of the members of the board shall be called by the governor, as soon after the appointment of said board as he may deem advisable, to be held at the said college, in Columbus, Ohio. All succeeding meetings shall be called in such manner, and at such times as the board may prescribe. The said board shall meet at least once annually, and at such other times as they may think necessary for the best interests of the said college: provided, however, that said meetings shall not exceed two in any one year. A majority of the board of trustees present at any meeting shall constitute a quorum to do business: provided, it shall require a majority of all the board to elect or remove a president or professor.

SEC. 6. The board of trustees shall cause to be made, on or before the first day of January of each year, a report to the governor of the condition of said college; the amount of receipts and disbursements, and for what the disbursements were made; the number of professors, teachers, and other officers, and the position and compensation of each; the number of students in the several departments and classes, and the course of

instruction pursued in each; also, an estimate of the expenses of the ensuing year; a statement showing the progress of said college, recording any improvements and experiments made, with their costs, and the results, and such other matters as may be supposed useful. There shall be printed, under the provisions of section seven (7) of the act passed March 30, 1875 (O. L., vol. 72, page 179), in pamphlet form, one thousand copies of said report for the General Assembly, one thousand for the president and faculty of said college, and three thousand copies for distribution by the trustees in their several districts, in such manner as they shall deem best for the interests of said college. The president of said college shall transmit, by mail, one copy to the secretary of the interior, and one copy to each of the colleges which are or may be endowed under the provisions of the act of Congress of July 2, 1862.

SEC. 7. All funds derived from the sale of land scrip issued to the state of Ohio by the United States, in pursuance of the aforesaid act of congress, together with the interest accumulated thereon, shall constitute a part of the irreducible debt of the state, the interest upon which, as provided by the act of February 10, 1870 (O. L., vol. 67, p. 15), shall be paid to the college by the auditor of state upon the requisition of the commissioners of the sinking fund, issued on the certificate of the secretary of the board of trustees, that the same has been appropriated by said trustees to the endowment, support and maintenance of the college, as provided in the act of congress aforesaid.

SEC. 8. That an act passed April 16, and took effect May 1, 1874 (O. L., vol. 71, p. 78), entitled "an act to amend the act entitled an act to establish and maintain an Agricultural and Mechanical College in Ohio," and sections ten, twelve, fourteen and sixteen of an act passed and took effect March 22, 1870 (O. L., vol. 67, p. 20), be and they are hereby repealed.

SEC. 9. That the said board of trustees shall fix the compensation of the faculty of said institution, and in fixing the same shall make such part thereof as may be just and reasonable, contingent upon the average attendance of pupils during the current year.

SEC. 10. That this act shall take effect and be in force from and after its passage.

Passed April 20, 1877. [74 v. 100.]

Repealed May 1, 1878.

By this act it will be seen that the Board of Trustees was increased from five to twenty, so as to include one member from each Congressional District of the State, and the following members were appointed by Governor Thomas L. Young:

1st	District	Alfred Gaither.
2d	"	C. Kinsinger.
3d	"	Cyrus Falconer.
4th	"	R. P. Finley.
5th	"	J. P. Schmeider.
6th	"	W. H. Scott.
7th	"	Herman Hoover.
8th	"	A. C. Deuel.
9th	"	T. C. Jones.
10th	"	W. P. Noble.
11th	"	Ralph Leete.
12th	"	J. Sullivant.
13th	"	D. W. Caldwell.

14th District.....Thomas Mickey.
15th " .....A. W. Glazier.
16th " .....J. C. Jamison.
17th " .....A. B. Cornell.
18th " .....C. W. Horr.
19th " .....E. F. Ensign.
20th " .....W. S. Streator.

Pursuant to a call from the Governor, the new Board met at the College on June 19, 1877, and effected a permanent organization, by the election of the following officers and committees:

President—Warren P. Noble.

Secretary—Joseph Sullivant.

Treasurer—Henry S. Babbitt.

Executive Committee—T. C. Jones, A. C. Deuel, Herman Hoover, W. S. Streator, J. Sullivant.

Committee on Farm Management—E. F. Ensign, C. Kinsinger, J. C. Jamison.

At the same session of the Legislature there was passed

AN ACT

To establish a school of mines and mine engineering in the Ohio Agricultural and Mechanical College.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That the trustees of the Ohio agricultural and mechanical college be and they are required to establish in said college a school of mines and mine engineering, in which shall be provided the means for studying scientifically and experimentally the survey, opening, ventilation, care, and working of mines, and said school shall be provided with complete mining laboratories for the analysis of ores, coals, and other minerals, with all the necessary apparatus for testing the various ores and coals, and also with the models of the most improved machinery for ventilating and operating all the various mines with safety to the lives and health of those engaged.

SEC. 2. Said trustees may require one of the professors now authorized to be employed in said institution, to give instruction in the most improved and successful methods of opening, and operating, and surveying, and inspecting mines, and in the methods of testing and analyzing coals and other minerals, especially those found in the state of Ohio. It shall also be the duty of such professor to register all experiments made in testing the properties of the coals and other minerals, and such results shall be published in the annual reports of said trustees. It shall also be the duty of said professor to preserve in a cabinet, suitably arranged for ready reference and examination, suitably connected with this school of mines, samples of the specimens from the various mines in the state, which may be sent for analysis, with the names of the mines, and their localities in the counties from which they were sent, and the analysis and a statement of the properties attached. It shall also be his duty to furnish analysis of all minerals found in the state and sent to him for that purpose by residents of this state.

SEC. 3. There is hereby appropriated out of the general revenue fund the sum of four thousand five hundred dollars, to be expended in providing apparatus, equipments, cabinets, etc., as mentioned in the first and second sections of this act.

SEC. 4. This act to take effect and be in force from and after its passage.

Passed May 7, 1877. [74 v. 216.]

At a meeting of the Trustees, held on June 20, 1877, the following action was had:

Resolved, That the curriculum be changed, by striking therefrom the Department of Political Economy and Civil Polity, and substituting therefor the Department of Mines, Mine Engineering, and Metallurgy.

Resolved, That Henry Newton, A M., M.E., be appointed Professor of Mines, Mine Engineering, and Metallurgy, in the Ohio Agricultural and Mechanical College, at the same salary as the other Professors.

Mr. Newton having visited the College, accepted the position, expecting to commence his labors at the opening session in September, 1877.

In the meanwhile, under an appointment of the United States Government, he visited the Black Hills, to complete some geological investigations upon which he had been employed; but, unfortunately, he was almost immediately prostrated by mountain fever, and died after a brief illness.

The professorship was now offered to William E. Guy, E.M., of St. Louis, a graduate of the Mining School of Freiburg, Saxony. He also visited the College, and left with the expectation of accepting the place, but on his return to St. Louis found it impracticable on account of business connections, which could not be at once dissolved.

The position was then tendered to and accepted by John A. Church, E.M., an experienced Metallurgist and Mining Engineer, who immediately proceeded to equip and put in order the department, and entered on his work of instruction in January, 1878.

The College faculty, with the consent of the Trustees, offered to give a course of lectures on agriculture and cognate subjects—to extend throughout the winter term, commencing in January, 1878, provided thirty or more applicants should signify their intention to attend the lectures. Seven persons, however, were all that appeared at the appointed time; and by reason of this meagre response, the lectures were not given.

The Executive Committee abolished the entrance examination in Algebra, before required of all students for admission; but at the November meeting, at the unanimous request of the faculty, this action was reversed by the Board.

In May, 1878, a third reorganization of the Board of Trustees was effected by the legislation that follows. The name of the institution was also changed by this act:

AN ACT

To reorganize and change the name of the Ohio Agricultural and Mechanical College, and to repeal certain acts therein named.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That the educational institution heretofore designated as the Ohio agricultural and mechanical college shall be known and designated hereafter as "The Ohio State University."

SEC. 2. The government of said university shall be vested in a board of seven trustees, who shall be appointed by the governor of the state, with the advice and consent of the senate; but no trustee, or his relation by blood or marriage, shall be eligible to any professorship or position in the university, the compensation for which is payable out of the state treasury, or said college fund.

SEC. 3. The members of said board of trustees, and their successors, shall hold their offices for the term of seven years each: provided, that the trustees first appointed under the provisions of this act shall hold their terms for one, two, three, four, five, six, and seven years, respectively, to be fixed by the governor in their commissions. In case a vacancy shall occur from death or other cause, the appointment shall be for the unexpired term. The trustees shall not receive any compensation for their services, but they shall be paid their reasonable and necessary expenses while engaged in the discharge of their official duties.

SEC. 4. The board of trustees shall have power, and it is made their duty, to collect, or cause to be collected, specimens of the various cereals, fruits, and other vegetable products, and to have experiments made in their reproduction upon the lands of the university, and to make report of the same, from year to year, together with such other facts as may tend to advance the interests of agriculture.

SEC. 5. The board of trustees shall have power, and it is hereby made their duty, to secure and keep in the said university a collection of specimens in mineralogy, geology, zoölogy, botany, and other specimens pertaining to natural history and the sciences; and it shall be the duty of the president of the university to collect and deposit in the said university in such manner as shall be directed by the trustees, a full and complete set of specimens as collected by him and his assistants, together with a brief description of the character of the same, and where obtained; and the said specimens shall be properly classified and kept for the benefit of said university.

SEC. 6. The first meeting of the members of the board shall be called by the governor, as soon after the appointment of said board as convenient, to be held at said university, in Columbus, Ohio. All succeeding meetings shall be called in such a manner, and at such times as the board may prescribe. The said board shall meet at least three times annually, and at such other times as they may think necessary for the best interest of the said university. A majority of the board of trustees present at any meeting shall constitute a quorum to do business: provided, a majority of all the board shall be required to elect or remove a president or professor.

SEC. 7. The board of trustees shall cause to be made, on or before the first day of January of each year, a report to the governor of the condition of said university; the amount of receipts and disbursements, and for what the disbursements were made; the number of professors, officers, teachers, and other employés, and the position and compensation of each; the number of students in the several departments and classes, and the course of instruction pursued in each; also, an estimate of the expenses for the ensuing year; a statement showing the progress of said university, recording any improvements and experiments made, with their costs, and the results, and such other matters as may be supposed useful. There shall be printed, under the provisions of section seven (7) of the act passed March 30, 1875 (O. L., volume 72, page 179), in pamphlet form, one thousand copies of said report for the general assembly, one thousand for the president and faculty of said college, and three thousand copies for distribution by the trustees in their several districts, in such manner as they shall deem best for the interests of said university. The president of said university shall transmit by mail one copy to the secretary of the interior, and one copy to each of the colleges

which are or may be endowed under the provisions of the act of congress of July 2, 1862.

SEC. 8. All funds derived from the sale of land scrip issued to the state of Ohio by the United States, in pursuance of the aforesaid act of congress, together with the interest accumulated thereon, shall constitute a part of the irreducible debt of the state, the interest upon which, as provided by the act of February 10, 1870 (O. L., volume 67, page 15), shall be paid to the university by the auditor of state, upon the requisition of the commissioners of the sinking fund, issued on the certificate of the secretary of the board of trustees, that the same has been appropriated by said trustees to the endowment, support and maintenance of the university, as provided in the act of congress aforesaid.

SEC. 9. That said board of trustees shall fix the compensation for the faculty, teachers, and all other employés of the university: Provided, that the compensation for the services of the president of said university shall not exceed three thousand dollars, and that of the professors twenty-five hundred dollars per annum.

SEC. 10. It shall be the duty of the board of trustees, in connection with the faculty of the university, to provide for the teaching of such branches of learning as are related to agriculture and the mechanic arts, mines and mine engineering, and military tactics, and such other scientific and classic studies as the resources of the fund will permit; but no student will be required to study military tactics or take part in military drill, or provide any military or particular uniform, except those who elect to study military tactics.

SEC. 11. That the act passed April 20, 1877 (O. L., volume 74, page 100), entitled "an act to regulate the Ohio agricultural and mechanical college in Ohio, and to repeal certain acts therein named," and all parts of acts repealed by said act, are hereby repealed.

SEC. 12. This act shall take effect and be in force from and after its passage.

Passed May 1, 1878. [75 v. 126.]

Under this act Governor R. M. Bishop appointed the following Board of Trustees:

Hon. James B. Jamison ..... Cadiz, Harrison county, for one year.
S. H. Ellis ..... Springboro, Warren county, for two years.
Hon. Stephen Johnston ..... Piqua, Miami county, for three years.
Hon. T. J. Godfrey ..... Celina, Mercer county, for four years.
Alston Ellis ..... Hamilton, Butler county, for five years.
T. Ewing Miller ..... Columbus, Franklin county, for six years.
Hon. J. H. Anderson ..... Columbus, Franklin county, for seven years.

At their meeting in May, 1878, the officers of the Board were chosen as follows:

T. J. Godfrey ..... *President.*
Joseph Sullivant ..... *Secretary.*
Dr. Henry S. Babbitt ..... *Treasurer.*

EXECUTIVE COMMITTEE.

J. H. Anderson, *Chairman.* T. Ewing Miller. Stephen Johnston.

At a meeting of the Board on June 18, 1878, Prof. T. C. Mendenhall, who had filled the chair of Physics and Mechanics in the institution from its opening, resigned his professorship to accept a similar position in the Imperial University of Tokio, Japan. His resignation was accepted and a resolution expressive of the high estimate of the service rendered by him to the University was entered on the minutes. At the request of the faculty the Board conferred on Prof. Mendenhall the degree of Doctor of Philosophy (*Ph. D*).

At the same meeting President Orton asked to be relieved of his duties as president of the University, on the ground that all of his time was now demanded by the professorship of Geology, which he also holds. Action on his request was deferred.

At the fifth commencement, viz., on June 19, 1878, the first class was graduated. It consisted of six young men, five of whom received the degree of *B.S.* and one the degree of *A.B.*

At a meeting of the Board held in July, 1878, S. W. Robinson, C.E., Professor of Mechanical Engineering and Instructor in Physics in Illinois Industrial University, was invited to take the chair vacated by Prof. Mendenhall. He accepted and entered on his duties at the opening of the Fall Term, September 12, 1878. He was charged by the trustees with the immediate establishment of a department of Mechanical Engineering in connection with his professorship. He entered at once upon this duty, and a class of ten students has already begun work in the new department.

A course of lectures on Agriculture was again offered by the faculty of the University, with the approval of the Trustees, to the farmers of Ohio, the course to begin on January 9, 1879, and continue four weeks. The giving of the course was made contingent on the names of thirty applicants being received by December 9, 1878. The requisite number having signified their purpose to attend, a programme of the course has been issued.

At a meeting of the Board, held on November 7, 1878, Albert Allen, Esq., was elected Secretary, and entered at once upon his duties.

In enumerating the resources of the University, mention has been made of the grant made to it by the State of Ohio of unsurveyed and unentered lands in the Virginia Military District of the State. This grant was made in the early part of the year 1872. It has not yet become a source of income to the institution, but it is hoped that some addition to the funds will ultimately result from it.

Several efforts have been made to obtain, for the better equipment of the University, the proceeds that should arise from the sale of swamp

and canal lands within the limits of Ohio. Favorable action has twice been taken by the Senate.

With the following recapitulation, this history will be concluded:

The productive funds of the institution, derived from the sale of the land scrip and from interest accruing thereon, now amount to $500,000, and constitute a part of the irreducible debt of the State, on which interest is computed and paid at 6 per cent., giving an annual income of $30,000.

The money furnished by Franklin county and citizens of Columbus, amounting to about $328,000, has been used in the purchase of a farm of 317 acres within the corporate limits of the city of Columbus, and in the erection of the necessary college and farm buildings, and in the equipment of the several departments of instruction. Since the purchase of the farm, the price of land in this portion of the city has been largely increased. When to this is added the value of the lands given to the University by the State in the Virginia Military District, the property belonging to the institution, exclusive of its endowment, will scarcely fall below $500,000.

During the first year of the College there were in attendance	90	students.
During the second year	118	"
During the third year	143	"
During the fourth year	254	"
During the fifth year	309	"

The numbers given include all the students in the institution between November first and the subsequent November first, in accordance with the State requirement for making the annual report.

APPENDIX B.

BY-LAWS AND RULES AND REGULATIONS

OF THE

BOARD OF TRUSTEES OF THE OHIO STATE UNIVERSITY.

ORGANIZATION AND MEETINGS.

SECTION 1. The officers of this Board shall consist of a President, Secretary, and Treasurer, who shall be chosen by ballot at the first meeting of the Board, and at each annual November meeting thereafter, and shall hold their offices until their successors are elected and qualified.

SEC. 2. There shall be three meetings of the Board each year. One meeting shall be held on the third Thursday of November of each year, at the city of Columbus, at 9 o'clock A.M.; another meeting shall be held at the University on Tuesday of the week of the annual examination and commencement; and the third meeting shall be held at Columbus at such time as may be agreed upon by the Board.

OF THE RIGHTS AND DUTIES OF THE PRESIDENT.

SEC. 3. The President shall take his place precisely at the time provided for at the preceding meeting, and shall immediately call the Board to order.

SEC. 4. He shall have the right to call upon any member to perform the duties of the Chair, but such substitution shall not extend beyond an adjournment.

SEC. 5. He shall preserve order and decorum in the proceedings of the Board, and shall observe and impartially administer that system of rules and regulations known as "parliamentary law," so far as the same may be applicable to the proceedings of this Board.

SEC. 6. All committees shall be appointed by the President, unless otherwise ordered by resolution of the Board.

SEC. 7. He shall sign the journal of all proceedings of the Board, had at each meeting; and all appointments made by the Board shall be signed by him, attested by the Secretary, who shall affix to every such appointment the corporate seal.

SEC. 8. The President is authorized to call special meetings of the Board; and it is hereby made his duty to do so, upon request of a majority of the Executive Committee, or whenever in his judgment the same should be convened, by causing all the members to be notified a reasonable time before any such meeting.

EXECUTIVE COMMITTEE.

SEC. 9. The Executive Committee shall consist of three members, who shall be chosen by ballot at the November meeting; who, when the Board is not in session, shall have the management and control of the affairs of the University, under direction of the Board, which committee shall furnish to the Board, at every regular meeting thereof, or oftener if required by the Board, a full report of their proceedings in the management and control of the University.

SEC. 10. The Executive Committee shall not create any liability not duly authorized by the Board, nor contract any debts beyond the appropriation made by the Board; but the order of the chairman of said committee, or the resident trustee designated by them, shall be sufficient warrant for the Secretary to issue his draft on the Treasurer for the payment of such orders as may be approved by said committee.

FARM COMMITTEE.

SEC. 11. There shall be elected, by ballot, at the November meeting of the Board, a committee of three members, to have the supervision and direction of the management of the University farm, and of experiments made thereon, subject to the direction of the Board.

SEC. 12. The Farm Committee are prohibited and restrained, in like manner as the Executive Committee, in regard to liabilities and debts, but are authorized to expend any and all appropriations made by the Board for the use of the farm, and to conduct experiments on the same; and an accurate account of such experiments, their cost and results, shall be prepared and presented to the Board in time for publication in the annual report.

SEC. 13. The Secretary shall recognize the orders or requisitions made upon him by the Farm Committee, and shall issue his draft, in payment of the same, on the proper appropriation.

COMMITTEE ON FINANCE.

SEC. 14. There shall be elected, by ballot, at the November meeting of the Board, a Committee on Finance, to consist of three members, who shall have charge of, and report upon, such matters as the Board may from time to time refer to them; and who shall recommend to the Board for adoption such measures as, in their judgment, will best promote the pecuniary interests of the University.

SEC. 15. It shall be the duty of the Finance Committee, at the November meeting, to examine all vouchers held by the Treasurer, and to make a comparison of his books with those of the Secretary, and report the results of such examination and comparison to the Board at the same meeting.

DUTIES OF THE SECRETARY.

SEC. 16. The Secretary shall be the custodian of the books, papers, and seal, and he shall, in all proper cases, authenticate the acts of the Board by affixing said seal; he shall also conduct the Board's official correspondence.

SEC. 17. He shall attend all meetings of the Board, keep a correct journal, entering all motions, resolutions, orders, and other proceedings, and perform such other duties as the Board may, from time to time, prescribe.

SEC. 18. It shall be the duty of the Secretary to prepare the annual report of this Board, and submit it for adoption or revision at the November meeting.

DUTIES OF THE TREASURER.

SEC. 19. The Treasurer shall keep an accurate account of all moneys received and disbursed by him, and at the end of every quarter he shall furnish the Executive Committee, if directed, and at each November meeting to the President of the Board, a detailed statement of all moneys received and expended by him; and he shall give bond, payable to the State of Ohio for the use of the Ohio State University, in the sum of fifty thousand dollars ($50,000), for the safe keeping of said funds and the payment of the same in obedience to the rules and regulations of the Board, and for the faithful performance of his duties as said Treasurer.

MODE OF ACCOUNTING.

SEC. 20. Before any money shall be paid into the Treasury, or any requisition be made upon the Auditor of State in favor of the Treasurer (as provided in act of the Legislature passed March 22, 1870), the Secretary shall enter a correct account of the same in a book to be kept for the purpose, and certify all such money to the Treasurer; and the Treasurer shall not receive any money except upon such certificate or requisition; and all such certificates and requisitions shall be numbered in the order in which they shall be issued, in duplicate, the receipt of one of which shall be acknowledged upon its face by the Treasurer and preserved by the Secretary in book form, and the other given to the Treasurer.

SEC. 21. No money shall be paid by the Treasurer except in pursuance of appropriations made by the Board of Trustees, and as otherwise provided in section 23 of these By-Laws.

SEC. 22. Every draft upon the Treasurer shall be drawn by the Secretary, numbered in consecutive order, and shall be made payable to the order of the person in whose favor the same may be made, and specify upon its face for what purpose it is drawn.

SEC. 23. No draft shall be drawn by the Secretary, except for the payment of fixed salaries, expenses of the members of the Board, stationery and postage, only by resolution of the Board or upon the written order of the Executive Committee, the chairman thereof, or the person duly authorized by the Board.

SEC. 24. Every person receiving such draft upon the Treasury shall sign a receipt for the same, which shall agree in date, number, and amount with such draft; and all such receipts shall be preserved by the Secretary in book form. The Treasurer, upon receiving any such draft, shall, upon payment, cancel the same, as paid bank checks are canceled, and enter in his books the number, date, and amount of every such draft and the name of the person to whom paid; and the said canceled drafts shall be carefully preserved by him as vouchers for which he shall be credited in his settlements.

ORDER OF BUSINESS.

SEC. 25. As soon as the Board is called to order, a quorum being present, the journal of the preceding day, or of the last meeting, shall be read by the Secretary, and, if necessary, corrected by the Board.

SEC. 26. When the journal has been read and approved, as provided for in the foregoing section, the President shall state any matters of business to be acted upon, which shall be disposed of in such order as he may have it arranged, unless otherwise determined by a majority of the members present. Every motion or resolution that may be deemed necessary to be entered upon the journal shall be reduced to writing by the member offering the same, and the vote upon such motion or resolution shall be taken by yeas and nays, when such a vote is demanded by any member, and recorded with the motion or resolution.

THE FACULTY.

SEC. 27. The immediate government of the University, in all that relates to the order and discipline therein, the times of recitation, the general care of the buildings, etc., etc., is vested in the President and Professors constituting the Faculty, who are authorized and required to establish such rules and regulations as may conduce to the good order and proper government of the University, subject to the approval of the Board of Trustees.

SEC. 28. They are authorized to affix and enforce such penalties for the violation of said rules and regulations, as the nature and manner of the offense may demand, a majority of the Faculty concurring therein, but their action may be reviewed and annulled by the Board after an impartial hearing of the facts of the case.

SEC. 29. The Faculty shall hold meetings as often as may be deemed necessary to consult and advise about the mutual management of the University, and a full and correct record of the proceedings of such meetings shall be kept, which shall at all times be open to the inspection of any member of the Board.

SEC. 30. They are further empowered to make such rules and regulations, and enforce their strict observance, relating to the study of Military Tactics, as they deem proper: provided, that such rules and regulations do not conflict with an act of the legislature, relating to the same, passed May 1, 1878.

SEC. 31. The President of the University is charged with the general oversight of all work done in the various departments already established, and hereafter to be established, and shall preside at all meetings of the Faculty.

SEC. 32. All members of the Faculty are required to meet their classes promptly, and a failure so to do, without a reasonable excuse rendered in writing to the President of the University will subject the delinquent to a reduction of salary proportionate to the time lost or dismissal, as may be determined by the Board.

STUDENTS.

SEC. 33. Students of the University are required at all times to yield a prompt obedience to all rules adopted for their guidance by the Faculty.

SEC. 34. All term-bills or fees required from students must be paid, or satisfactorily arranged for, before they are admitted to the privileges of the University.

DEGREES.

SEC. 35. Degrees *in cursu* shall be conferred by the Board only upon recommendation of the Faculty; but honorary degrees may be conferred, with or without the recommendation of the Faculty, whenever a majority of all the members of the Board of Trustees deem such action just and proper.

SEC. 36. All diplomas issued to those receiving degrees from the University shall be signed by the President and Secretary of the Board of Trustees and by the members of the Faculty of the University.

MISCELLANEOUS.

SEC. 37. The following-named officers of the Board shall each be entitled to receive an annual compensation for his services, payable monthly, as follows: The Secretary shall receive an annual salary of five hundred dollars ($500), and the Treasurer shall receive an annual salary of four hundred dollars ($400.)

SEC. 38. The Trustees shall each, at every meeting of the Board, present to the Sec-

retary a statement in writing of the sum expended in attending such meeting, who shall receive the same, and thereupon draw upon the Treasurer for the amount, which shall be paid by the Treasurer upon presentation of order or draft.

SEC. 39. All recommendations, communications, and reports made to the Board by any one must be presented in writing, and must be addressed to the President of the Board of Trustees.

SEC. 40. *These By-laws, or any one of them, may be suspended, amended, or annulled at any regular or special meeting by a majority vote of the members in attendance.*

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